MARCH 2020

IACP
International Association of Chiefs of Police

POLICE CHIEF

Innovations in SMART POLICING

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Pinole Police Department

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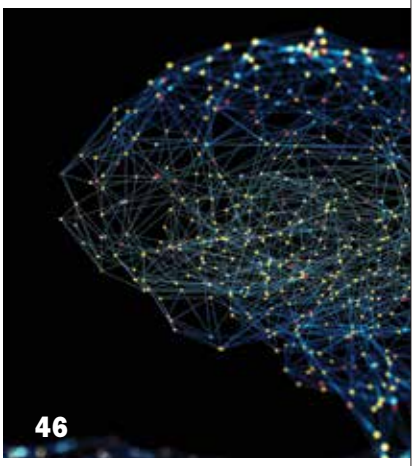
ANTONIO SAJOR JR.

Cover image *Photo by Giuseppe Cacace/Getty Images*



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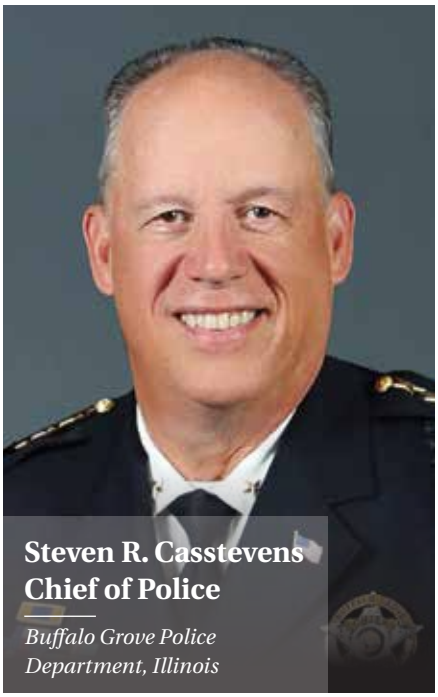
A Blueprint for Reform and Advancements

The Commission on Law Enforcement and the Administration of Justice



Steven R. Casstevens
Chief of Police
Buffalo Grove Police Department, Illinois

AS POLICE CHIEFS AND LAW ENFORCEMENT PROFESSIONALS, OUR PRIMARY RESPONSIBILITY IS TO ENSURE THE SAFETY AND WELL-BEING OF OUR COMMUNITIES AND OUR OFFICERS AND TO MAKE SURE THAT WE ARE OPERATING IN THE MOST EFFECTIVE AND EFFICIENT MANNER POSSIBLE.

The nature of our profession requires that we continually adjust to a vast array of new and ever-changing challenges as we strive to fulfill our mission of protecting the people we serve.

Today, unlike ever before, law enforcement confronts myriad threats, challenges, and opportunities that were simply unimaginable even a few years ago. These challenges often extend outside of the realm of normal law enforcement functions and go beyond the services we were trained for or have the capabilities to confront. For example, our officers are asked to respond to persons affected by mental illness or substance abuse disorders on a daily basis. Our mental health facilities are overwhelmed and crowded, leaving the police to act as mental health respondents.

A central, comprehensive plan to guide our criminal justice endeavors—extending beyond just law enforcement to include the courts, community, corrections, victims' rights, national security, and faith-based and social services—is long overdue and an extremely important element of our effort to adjust to the new and growing realities of crime.

That is why, for over two decades, the IACP has advocated for the creation of a Commission on Law Enforcement and the Administration of Justice (National Commission). The National Commission, established by an executive order signed by U.S. President Donald J. Trump at the 2019 IACP Annual Conference and Exposition, will create the much-needed blueprint the IACP has been advocating for. This historic commission was created thanks to close collaboration between the White House, the U.S. Department of Justice, U.S. Attorney General William P. Barr, and the IACP and should inspire hope for meaningful criminal justice reform and advancements in the policing profession.

The National Commission is currently conducting a system-wide, comprehensive review of the criminal justice system, identifying gaps, needs, and opportunities and developing a strategic plan that will guide federal, state, local, and tribal efforts for the next 25–30 years. The first meeting of the National Commission occurred at the IACP Officer Safety and Wellness Symposium on February 27, 2020, in Miami, Florida, and focused on the topic of officer health and safety.

The commissioners will hold several more meetings and hearings and conduct numerous site visits before they submit a final report to the attorney general in October 2020. While the work has only just begun, we need to support these efforts and speak of the value of the work the National Commission is undertaking to our colleagues, elected officials, community members, and media. To aid you in your discussions, I've captured some key points that I hope you will find useful.

Why did the IACP advocate for the National Commission?

The last National Commission, created by U.S. President Lyndon Johnson, produced landmark changes for the criminal justice system and put in place many lasting measures that fundamentally changed the way law enforcement agencies and the criminal justice system operate.

A few highlights from the Johnson Commission and its more than 200 recommendations include

- the creation of the National Institute of Justice (NIJ)/Bureau of Justice Statistics (BJS)/Bureau of Justice Assistance (BJA);
- the creation of the 911 system;
- the development of the automated fingerprint identification systems;
- the creation of the National Criminal Information Center (NCIC);
- the foundation for a community policing–based approach to crime;
- improved training and technical assistance standards for law enforcement; and
- overall professionalization of law enforcement.

Much has changed in the criminal justice world in the over 50 years since the Johnson Commission, and we are facing several important issues and challenges that made the executive order to create the National Commission so very important.

Why do we need a commission?

Although we can identify many of the challenges that are confronting the criminal justice system, identifying effective solutions is not always easy. The National Commission will have the opportunity to examine our entire criminal justice system and its many pieces, including policing, courts,

community, corrections, victims' rights, national security, and the intersection of criminal justice with faith-based and social services. This goes far beyond past efforts that focused solely on law enforcement.

What are some of the issues the National Commission may examine?

There will be 15 working groups, each assigned to a different topic in the criminal justice field. Those working groups are

- Business and Community Development
- Criminal Justice System Personnel Intersection
- Data and Reporting
- Grant Programs
- Homeland Security
- Juvenile Delinquency and Youth Crime
- Law Enforcement Recruitment and Training
- Officer Health and Safety
- Reduction of Crime
- Reentry Programs and Initiatives
- Respect for Law Enforcement
- Rural and Tribal Law Enforcement
- Social Problems Impacting Public Safety
- Technology
- Victim Services

Whom will the National Commission be working with?

The commission will hear from voices and consult perspectives outside of law enforcement via its working groups. Civil rights organizations, civic leaders, defense bar associations, academics, victims' rights organizations, the medical community, and community organizations should and will help with this important mission. This collaboration will occur in a variety of ways. Through site visits, field hearings, panel presentations, and other public meetings, the commissioners and working group members will receive valuable insights, counsel, and recommendations from a diverse range of voices, making this a truly comprehensive effort.

What is the difference between the National Commission and the President's Task Force on 21st Century Policing, which was just five years ago? Why is this one needed?

The number one overarching recommendation from U.S. President Barack Obama's 21st Century Task Force on Policing in 2015 was for "the creation of a National Crime and Justice Task Force to review and evaluate all components of the criminal justice system for the purpose of making recommendations to the country on comprehensive criminal justice reform." At the conclusion of the task force, President Obama and the task force members realized that law enforcement was just one aspect of the criminal justice system, and there was so much more that needed to be discussed and examined. While the President's Task Force on 21st Century Policing was charged only with focusing on policing, the National Commission will examine all aspects of the criminal justice system and how they interact. The National Commission and its recommendations, drawn from the insight of diverse subject matter experts and stakeholders, will bring about innovative and lasting change that goes beyond policing, similar to the effects of the 1965 Johnson Commission. The U.S. attorney general challenged the commissioners at their swearing-in to think boldly, explore new ideas, consider diverse opinions and approaches, and plan for our future. The work of the National Commission is about setting a course for U.S. policing and the administration of justice for the next 25–30 years.

This commission represents a once-in-a-generation opportunity to develop and implement a strategic blueprint for criminal justice that will guide efforts to protect our communities for years to come. Implementation of the commission's recommendations will require action on the part of the U.S. Congress or other governing bodies. That is why I urge you to follow the National Commission's proceedings closely and to encourage your community leaders to do the same. When the time comes to advocate for implementation of the commission's recommendations, we, as a profession, must be positioned to do so.

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Commission on Law Enforcement and the Administration of Justice

AFTER MORE THAN TWO DECADES OF ADVOCACY, THE IACP HAD A FRONT ROW SEAT TO HISTORY AS THE ASSOCIATION'S LEADERS JOINED U.S. ATTORNEY GENERAL WILLIAM BARR ON JANUARY 22, 2020, AS HE SWORE IN THE 16 COMMISSIONERS OF THE COMMISSION ON LAW ENFORCEMENT AND THE ADMINISTRATION OF JUSTICE AT THE U.S. DEPARTMENT OF JUSTICE IN WASHINGTON, DC.

U.S. President Donald J. Trump signed the executive order establishing the commission in October 2019 at the IACP Annual Conference and Exposition in Chicago, Illinois, before thousands of law enforcement officers. This is the first comprehensive commission on U.S. criminal justice since the 1960s.

Commissioners will submit a final report containing its findings to the attorney general this October, who will in turn present it to President Trump.

> ***"I particularly want to recognize the work of the IACP, which for over 20 years has made the establishment of a Commission a national priority. Without its commitment, we would not be here today. We look forward to working with the IACP and, indeed, all law enforcement organizations to make this effort a success."***
>
> —U.S. Attorney General William P. Barr

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HSI's Use of Advanced Data Analytics to Identify Criminal Networks and Combat Transnational Crime

Derek N. Benner
Executive Associate Director, Homeland Security Investigations

U.S. Immigration and Customs Enforcement

> "Innovation and creative ideas need the right environment to grow and flourish."

IN THE INVESTIGATIVE REALM OF LAW ENFORCEMENT, WE ARE OFTEN FACED WITH THE REALITY THAT WE ARE DATA RICH AND ANALYTICS POOR.

While collecting data is a valuable and necessary process for any organization or industry, the utility of data is minimized without a meaningful way to organize, analyze, and refine the information. The more data an organization possesses, the more cumbersome the process can be—as information is segmented into more and more data silos and repositories, further complicating the ability to effectively organize and analyze all that are collected. In law enforcement, we are judged not by the amount or type of data we possess, but by our ability to process and effectively analyze the data for use in future investigations and enforcement activity. Finding a way to merge such disparate collections of data into a meaningful whole—one that can be sifted and sorted by advanced analytics to identify unseen connections—may seem insurmountable; nonetheless, that is the challenge confronting all law enforcement organizations. This effort becomes especially meaningful when applied to combating transnational criminal organizations (TCOs) that operate globally across legitimate trade, travel, and financial systems.

For Homeland Security Investigations (HSI), which during the last fiscal year made more than 37,000 criminal arrests, disruptions to TCOs directly translate to positive impacts in cities and towns across the world. Simply put, leveraging technology and innovative ideas to create a more efficient and effective work process means HSI special agents are able identify and rescue victims more quickly and put more criminals behind bars. While the process for HSI was implemented on a national scale, the utilization of talent on the front line to bring forward innovative techniques is a concept that is scalable and can be implemented by even the smallest of jurisdictions to increase efficiency of operations, resulting in cost savings, more effective policing, and safer communities.

Over the years, HSI invested in a number of commercially available solutions, and, to date, some of these products have helped the agency achieve operational successes across its broad investigative portfolio. However, our investigations have become more data intensive as criminal organizations have become more sophisticated. We also learned from our frontline personnel that many of the data and analytical solutions deployed to the field were of little help in their investigative work and were not developed or procured with our workforce in mind. The reality of this situation highlighted the large number of missed opportunities in which data were available but avenues and practical capabilities for analysis were lacking, leaving untold stories locked in multiple closed systems. Our agency, now 10,000 strong with more than 7,000 special agents, has grown tremendously in size, as has our ability to investigate increasingly complex crimes. Where we had plateaued, however, was in delivering data analytics capabilities to the front lines. Also, apparent to us, in addition to data analytics challenges, was that many routine business processes were cumbersome and paper-based, and we needed to develop a system where we would never miss a good idea from the front lines of our operations.

Innovation and creative ideas need the right environment to grow and flourish. In our case, one such idea came from a

special agent in south Texas who possessed a special thought process and skill set. While working in a busy southwestern office, this agent also worked in his garage to develop a program capable of analyzing millions of data points to identify and better combat TCOs. We connected this agent with several other special agents who also possessed creative ideas and relevant skill sets, creating an ecosystem where their voices and the voices of their frontline colleagues would never be lost. This ecosystem became what is now the Innovation Lab (the Lab).

From the beginning, we understood that for the Lab to succeed, the agency needed to understand how successful corporations convert ideas into products that customers cannot live without. We decided to buck the conventional practice of building the Lab from the top down and, instead, sought to build from the front line up. We also wanted to steer away from the bureaucratic machine that often hampers innovative thinking. In search of an unconventional framework, we headed to Silicon Valley and met with successful tech companies known for innovation. Through this collaboration, HSI formed an operational paradigm for the Lab—a structure focused on the customer, embracing agile development, reusable tools, a human-centered design, and best-in-class open-source technologies.

While our standard protocol has been to purchase entire systems, which often required the agency to pay for components we didn't need or never used, the Innovation Lab's platform uses an iterative and modular design, moving away from a one-size-fits-all model to smaller, more adaptable, customized tools. This allows HSI to purchase only the tools needed to fulfill a specific mission. Furthermore, the HSI Innovation Lab has focused on consolidating information and wrapping it with intelligent, machine learning–powered tools. This enables our analysts and special agents not only to access our investigative holdings in one consolidated storehouse, but also to run advanced analytics across this information to identify new connections.

In its first year, the HSI Innovation Lab has succeeded in a number of key areas, overcoming significant data analytics challenges.

For example, the Lab deployed a mobile development team to assist with a child exploitation investigation in New England, where agents needed to sift through 1.76 TB of data to identify predators living across the world engaged in the exploitation of minors. The Lab was able to remove duplicate records and media files, organize the information into a searchable tool for special agents and analysts, and produce a viable user interface. This effort led directly to the identification of numerous prolific international pedophiles, including the apprehension of one who was not only exchanging images via the Internet but also sexually abusing a family member. His identification and apprehension would not have been possible without the HSI Innovation Lab's efforts.

In addition, as a remedy to time-consuming and routine data entry that was part of active criminal investigations, the Lab built a machine learning tool that processed more than 55,000 records in 11 days, saving nearly 300 days of manual processing.

Another success came in response to a scheme in which smugglers exploited children as props in

HSI Innovation Lab

fraudulent families. The HSI Innovation Lab used natural language processing to quickly identify and extract information from the narratives of apprehension reports that were previously unsearchable and unstructured. Certain elements extracted from these data were overlaid with the agency's vast data holdings, including financial and travel data. Through the analysis of more than 2.8 million records, the Lab identified 750 children as potential victims of this child exploitation scheme.

While the case-specific successes were significant, so too are the larger initiatives that stand to benefit HSI personnel across the organization, including

- a single, enterprise-wide, lead-tracking mechanism that will quickly generate, refer, track, visualize, and disseminate investigative leads, through which HSI investigators will realize real-time connections with colleagues across the United States and overseas;
- an email analytics tool allowing investigators to intake, triage, search, filter, and report on email evidence using natural language processing and advanced analytics; and
- a dark net data analytics tool designed to overlay data from illicit dark net marketplaces against existing data sets to significantly impact current cases and help identify criminal individuals and organizations previously unknown to HSI.

These are just a few examples of numerous programs currently being developed and deployed by HSI's Innovation Lab.

By enhancing and improving the way HSI works with its data, the Lab not only directly strengthens the agency's ability to identify criminal networks and combat TCOs, but also better allocates resources, captures enforcement statistics, and improves business processes. This is just the beginning, and with continued investment, the Lab will position HSI firmly at the forefront of technology-driven investigative efforts, enabling our agency to remain agile and ready to adapt to an ever-changing threat landscape. The Innovation Lab has opened the doors to a new era in which the best ideas are coming from the people who do the work every day in a creative environment where teams thrive.

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To learn more, check out the Tech Conference Preview on pages 56–58.

Spruce Up Your Social Media Strategy

IACP's recent blog post offers five simple steps any person or agency can take to quickly update and refresh their social media, which can make a big difference in how your followers or potential new followers engage with your content.

Get these tips at **theIACP.org/blog**.

Submit Your Leadership Question

What question would you ask an experienced leadership mentor if you had the chance? Send your question to **editor@theIACP.org** and *Police Chief's* mentor panel might share their answers in an upcoming edition of The Advisor.

See this month's question and answers on page 17.

Effective Strategies to Investigate and Prosecute Labor Trafficking in the United States
Effective Strategies to Investigate and Prosecute Labor Trafficking in the United States

Labor Trafficking Training Course

The IACP's Anti-Human Trafficking initiative, in collaboration with the U.S. Department of Justice (DOJ), provides training and technical assistance to the law enforcement field. Most recently, the IACP delivered its Effective Strategies to Investigate and Prosecute Labor Trafficking in the U.S. training in San Antonio, Texas. Detectives, investigators, crime analysts, and prosecutors representing a combined 25 federal, state, and local agencies attended the training event.

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Q: How does the willingness of police leaders to embrace new technology and innovation influence the profession?

A: Many police leaders recognize that technology will allow officers to better serve the community in a safer manner. With the influx of new advances in equipment and software, it is imperative that executives carefully evaluate new technologies to give officers the proper tools needed to police effectively. This includes consulting with available resources and subject matter experts, both within and outside an agency, to make informed technology decisions. A technology should not be employed just because it exists. Leaders need to consider if it will improve the service provided by an agency. It is important to remember that technology is just part of the solution, not the entire solution.

Brandon Epstein
Detective
Middlesex County Prosecutor's Office, New Jersey

A: Technological advancements and innovation are moving at the speed of light, and this pace will only accelerate. Embracing technological changes that improve police work is no longer optional. The use of cutting-edge technology and data analysis has transformed the police profession from strictly law and order to the provision of a system of safety, protection, and progressive community involvement. Police leaders need to understand that these new elements have become part of the fundamental role of the profession. Those who recognize how to integrate technology into these tasks reap the benefits of improved efficiency, safer environments, and trusted community partners. These leaders will also attract a different caliber of recruit, expanding the diversity of the profession.

Zhivago Dames
Chief Superintendent
Royal Bahamas Police Force

A: Speed of the leader equals speed of the organization. Building and nurturing a tech-progressive department begins with the leader. Embracing technology is no longer a choice but a mandate for modern police departments striving to increase safety and customer service. Delivering innovation in our day-to-day approaches is the responsibility of today's organizational leaders just as much as providing the traditional tools of the trade.

To stay tech relevant means to continue to explore new and emerging technologies and to drive innovation by influencing industry development. Ultimately, responsible use of technology can improve officer safety and service to our communities. Evolving with technology is the mutual goal of police leaders, our communities, and the industries that serve law enforcement.

Rick Scott
Assistant Chief of Police
North Richland Hills Police Department, Texas

A: Emerging technology is in lockstep with the changing face of the profession, which requires tech-savvy law enforcement professionals. One way Homeland Security Investigations (HSI) embraces new technology is through our Innovation Lab, which focuses on developing investigative tools to rapidly analyze large amounts of disparate data to support mission-critical and often time-sensitive investigations and to tackle the time-consuming and mundane tasks usually faced by our special agents and criminal analysts. Seeing firsthand how enthusiastically these tools are embraced by our workforce, I would encourage all law enforcement leaders to be willing to incorporate technology into everyday policing.

Joanna Ip
Assistant Director
U.S. Homeland Security Investigations

1Q3A

Experience is often said to be the best teacher. Each month, a question asked by a new chief of police or future law enforcement executive will be answered by experienced leaders from our mentorship panel.

Q: ***What skills do you try to cultivate in rising leaders in your organization?***

A1: *Vice Commander Shan Nuckols:* Emerging leaders have already had success at the tactical level and demonstrated their potential to take on increased responsibility. As strategic leaders, it is important to take the opportunity to expose rising leaders to a wider knowledge base beyond the tactical. This includes a mix of skills in the art and science of leadership. The "art" includes topics on emotional intelligence, coaching, situational leadership, critical conversations, and conflict resolution. The "science" skills include managing budgets, developing policy, and recruiting and training, as well as various human resource programs. If developing leaders do not already have a mentor, this is the perfect time to help them develop that relationship. Last, a leadership shadow program can help these personnel see both the art and science of leadership in action.

A2: *Detective Chief Superintendent Thorsten Kunst:* In Germany, young police officers who are supposed to become future leaders have already been trained on all police-related topics that are needed for the job. But this doesn't necessarily include "soft" personal skills like empathy, communication, decisiveness, conflict resolution, and cooperation. Those skills are even more important when it comes to rising leaders who should help an organization to improve and evolve. Therefore, for me, it is crucial to see whether young officers are acting like role models and whether they come up with smart and unconventional approaches on complicated topics. That is what I try to cultivate—"out of the box" thinking and a bedrock of personal and soft skills.

A3: *Chief C.J. Davis:* Effective and transformative leadership in today's ever-changing police environment has taken on totally new characteristics. As law enforcement professionals face more complex challenges in leading police operations, there is a prevailing demand for leaders to hone a diversified cache of unconventional skill sets—in particular, understanding how one's own leadership style and influence can be instrumental in moving the organization in a positive direction or how a leader's negative attitude can set the agency on a backward trajectory. The manner in which each leader of the organization conveys the organizational philosophy and mission throughout the agency with synergy and conviction is essential for organizational success. This level of positive advocacy for the organization should be cultivated early in the leadership experience and reinforced throughout the organization.

"Q" Do you have a question for our mentors? Email us at **EDITOR@THEIACP.ORG**, and you might see it in a future issue!

MEET THE MENTORS

Shan B. Nuckols, Vice Commander/ Special Agent

U.S. AIR FORCE, OFFICE SPECIAL INVESTIGATIONS, QUANTICO, VIRGINIA

Thorsten Kunst, Detective Chief Superintendent

FEDERAL CRIMINAL POLICE, GERMANY; SECONDED NATIONAL EXPERT, EUROPOL SERIOUS AND ORGANIZED CRIME CENTER, THE HAGUE, NETHERLANDS

Cerelyn "C.J." Davis, Chief of Police

DURHAM POLICE DEPARTMENT, NORTH CAROLINA

BY
Joseph J. Polzak, Police Legal Advisor, Sarasota Police Department, Florida

Ipcha Mistabra—Maybe the Opposite Is True

"MAYBE THE OPPOSITE IS TRUE." THIS MIGHT SOUND TO SOME CHIEFS LIKE ADVICE FROM THEIR LAWYERS. WELL, THAT'S ACTUALLY A GOOD THING, AND IT'S PRECISELY WHY POLICE EXECUTIVES MAY WANT TO TASK THEIR LEGAL ADVISORS WITH THE ROLE OF "TENTH MAN."

Ipcha Mistabra is an Aramaic term in the Jewish Talmud that refers to thinking differently—and an Israeli military model dedicated to doing so. Following the October 1973 Yom Kippur War, Israel Prime Minister Golda Meir established the Agranat Commission, which developed and implemented solutions to fix a perceived blindsiding that led to the war. As a result, Israel developed an analytical unit, a "devil's advocate office," nicknamed Ipcha Mistabra, that is tasked with thinking differently.[1] Ipcha Mistabra has high status within the Israeli military; it is free to obtain any intelligence it needs and to offer critical review through reports that must be considered by all the major decision makers including the prime minister and minister of defense.[2] This office has also been called "the Tenth Man" and was popularized in the apocalyptic film *World War Z*, based on the 2006 Max Brooks novel.[3]

Israel institutionalized the Tenth Man in the military, where "hierarchy, discipline and obedience govern"—but "public policy decisions are more complicated and nuanced, and need to be considered from all possible angles." The purpose of the Tenth Man is to challenge conventional and received wisdom in this environment, "to look at things creatively, independently and from a fresh perspective…. The Tenth Man also looks at subjects that have not, but perhaps, should, receive attention."[4] As the U.S. foreign policy analyst Irving Janis put it, "The more amiability and esprit de corps among the members of a policy-making in-group, the greater is the danger that independent critical thinking will be replaced by group think."[5]

A large body of literature documents the extent to which law enforcement agencies have increasingly followed the military model in various functions.[6] "The military and law enforcement have had a long-standing relationship with overlaps in training, exercises, equipment, and… personnel." Perhaps most important, the "chain of command is a key component in both the military and law enforcement."[7] The Office of Community Oriented Policing Services, U.S. Department of Justice, has even examined any effect this relationship may have on community policing.[8]

The military model has, in fact, produced some of the best business practices in the world. Indeed, if an examination of current military theory and practice will reveal organizational and leadership practices that are "radically different" from what many advocates and critics believe; one will find instead a "thoroughly professional approach based on careful analysis of the arena in which they [the military] operate and a comprehensive understanding of the theories and doctrines that create success."[9] Case in point—Ipcha Mistabra.

The military model has produced a robust role for lawyers—judge advocates (JAGs)—who are assigned to advise commanders in the conduct of military operations, which in today's challenging environments involve "areas of extreme legal complexity, where political and strategic implications are at the forefront, and where black letter law is rarely sufficient to render competent advice."[10] To fulfill this need, the military develops and deploys JAGs "who will enhance the legitimacy of military operations in environments where evolving rules and a fluid situation require them not only to understand the underlying law and policy, but also to be innovative and nuanced in their legal analysis." JAGs are now institutionalized into the military decision-making process (MDMP) and advise commanders on rules of engagement (ROE), including, literally in real time, whether to attack a target or not.[11] JAGs are embedded closer to the ground commander now than ever before and may be "advising their commanders on every decision in the field," requiring JAGs to be knowledgeable not only about the law, but also the methodologies, strategies, and weapons of warfare.[12]

The military's increased utilization of JAGs is in part because commanders are encountering so many "thorny questions that have no good answer." JAGs are often looking to other sources of authority and applying it to new and rapidly evolving situations—"law by analogy."[13] The military relies on JAGs to provide "independent and candid advice" and ensure commanders are making fully informed decisions.[14]

Lawyers are well-suited to advise commanders in this role because their training is as much about thinking differently as it is about the black letter of the law in all its layers. "Thinking like a lawyer" includes developing

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> ***Lawyers are well-suited to advise commanders because their training is as much about thinking differently as it is about the black letter of the law in all its layers.***

authoritative arguments to support and refute many different sides of an issue, even where those sides are unclear and on-point authority is lacking.[15] Police legal advisors are similarly utilized to advise law enforcement commanders in the conduct of their operations. Legal advisors are not within a law enforcement agency's traditional command and control structure and are also well positioned to offer independent, alternative-rich advice to their commanders on the various considerations that apply to complicated, nuanced operating environments with constantly evolving rules and oversight.[16]

Like their JAG counterparts in the military, embedded, properly trained police legal advisors can advise their commanders on the 360-degree governance, risk management, and compliance picture that may involve utilizing "other sources of authority and applying it to new and rapidly evolving situations."[17] Moreover, including the police legal advisor in the organizational, operational, and strategic decision-making of the agency, will enable the advisor to fully and properly advise the chain of command on the true 360-degree picture and, in so doing, perhaps most importantly, "challenge conventional and received wisdom" and look "at subjects that have not, but perhaps, should, receive attention."[18]

The Police Executive Research Forum (PERF) recently conducted a survey to assess the "prevalence and nature of attorney participation in police problem-solving efforts." More than half (57.1 percent) of the law enforcement officers surveyed indicated that they "*frequently* could have used the active assistance of [police] lawyers on problem-solving efforts but did not have access to such help."[emphasis added] PERF further documented that officers desired not only legal advice and review of problem-solving efforts, but police lawyers' "direct involvement in the development or implementation" of programmatic responses.[19]

It is the job of every lawyer to thoroughly examine the facts for discovered and undiscovered issues; research primary, secondary, and alternative legal and non-legal authorities for cross-analysis against those facts from the different competing positions; and then effectively and responsibly help advance their client's interests.[20] It's mental combat, governed by the rule of law. There are also rules for the lawyers—that they "shall exercise independent professional judgment and render candid advice," and, in that advice, refer "not only to law but to other considerations such as moral, economic, social and political factors that may be relevant" to the situation.[21] This sounds like just the kind of multi-angled, nuanced, strategic advice that a law enforcement commander might be looking from the agency's Tenth Man. In this time of asymmetrical operating and oversight environments that law enforcement commanders find themselves in, having a lawyer as their Tenth Man makes sense in an age where, at any given moment, with any given issue, *Ipcha Mistabra—maybe the opposite is true.*

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[2]William Kaplan, "How Israeli Intelligence Failures Led to a Devil's Advocate Role," *The Star*, May 21, 2017, excerpt from *Why Dissent Matters: Because Some People See Things the Rest of Us Miss* (Montreal, Canada: McGill-Queen's University Press, 2017).

[3]Robert J. Joustra, "The Tenth Man," *Capital Commentary*, November 1, 2013.

[4]Kaplan, "How Israeli Intelligence Failures Led to a Devil's Advocate Role."

[5]Joustra, "The Tenth Man."

[6]Peter B. Kraska, "Militarization and Policing—Its Relevance to 21st Century Police," *Policing* 1, no.4 (January 2007): 501–513; Peter B. Kraska and Louis J. Cubellis, "Militarizing Mayberry and Beyond: Making Sense of American Paramilitary Policing," *Justice Quarterly* 14, no. 4 (1997): 607–629; Edward R. Maguire and William R. King, "Trends in the Policing Industry," *The ANNALS of the American Academy of Political and Social Science* 593, no. 1 (May 2004): 15–41.

[7]Meghan Reynolds, "The Military and Law Enforcement: A Thank You," *Community Policing Dispatch* 7, no. 8 (August 2014).

[8]Karl Bickel, "Will the Growing Militarization of Our Police Doom Community Policing?" *Community Policing Dispatch* 6, no. 12 (December 2013).

[9]Thomas J. Cowper "The Myth of the 'Military Model' of Leadership in Law Enforcement," *Police Quarterly* 3, no. 3 (September 2000): 231.

[10]Richard P. DiMeglio, "Training Army Judge Advocates to Advise Commanders as Operational Law Attorneys," *Boston College Law Review* 54, no.3 (May 2013): 1185–1206.

[11]DiMeglio, "Training Army Judge Advocates to Advise Commanders as Operational Law Attorneys," 1188–1889.

[12]Ari Shapiro, "JAGs Take a More Central Battlefield Role," *NPR Morning Edition*, April 5, 2007.

[13]Shapiro, "JAGs Take a More Central Battlefield Role."

[14]DiMeglio, "Training Army Judge Advocates to Advise Commanders as Operational Law Attorneys," 1188–1889.

[15]Ann-Marie Slaughter, "On Thinking Like a Lawyer," *Harvard Law Today* (May 2002).

[16]DiMeglio, "Training Army Judge Advocates to Advise Commanders as Operational Law Attorneys."

[17]Shapiro, "JAGs Take a More Central Battlefield Role."

[18]Kaplan, "How Israeli Intelligence Failures Led to a Devil's Advocate Role."

[19]Bruce E. Kubu, *The Role of Lawyers in the Police Problem-Solving Process* (Police Executive Research Forum), 2, 14, 19.

[20]"Preamble: A Lawyer's Responsibilities," *Model Rules of Professional Conduct* (American Bar Association); "Rule 1.3 Diligence – Comment," *Model Rules of Professional Conduct.*

[21]"Rule 2.1: Advisor," *Model Rules of Professional Conduct*; Stephan Dillard, "A Zealous Lawyer's Duties Go Beyond the Client," *Before the Bar* (blog), August 30, 2016.

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BY
Joe Dulla, Lieutenant, Los Angeles County Sheriff's Department, California; Robin Orr, PhD, MPHTY, BFET, Director, Tactical Research Unit, Bond University, Australia; Robert Lockie, PhD, Director, Tactical Research, California State University, Fullerton; and Jay Dawes, PhD, Assistant Professor, Oklahoma State University

Physical Demands of Patrol

THE PHYSICAL JOB DEMANDS OF SWORN PEACE OFFICERS ASSIGNED TO PATROL DUTIES CAN BE CHALLENGING TO QUANTIFY.

A starting point is to recognize perceived versus actual documented and researched demands. For example, a foot pursuit may "feel" like it occurred over great distances due to its intensity, when, in actuality, it was under 100 yards.

Luckily, close to 40 years of research, interviews with patrol officers, review of actual cases, and trend and pattern identification, along with input from subject matter experts, can provide guidance. The California Commission on Peace Officer Standards and Training (CA POST) and other agencies have conducted this type of research since 1979, with the goal of identifying the physical skills and physiological constructs exhibited by patrol officers.

Best practices in this type of analysis use a multipronged approach. This includes a job task analysis (JTA), interviews with samples of people actually performing the job, a review by subject matter experts (SMEs), and a determination of physical demands.

A JTA includes observations by surveyors, as well as interviews and surveys of incumbents performing the tasks and, sometimes, others who observe them. JTA surveys typically list examples of tasks and ask respondents to categorize the tasks using criticality, frequency, and duration. Criticality refers to how important a task is to the job. Frequency refers to how often or how many times a task is performed. Duration is used to define the amount of time a task is performed.

Next, interviews with those performing the actual tasks are used to clarify and add any additional relevant details. Following this step, SMEs review the data and provide further clarification. The last step in the process is to determine the underlying physical demands.

Between 2008 and 2010, the Los Angeles County, California, Sheriff's Department conducted a study on the physical demands placed on officers. The survey included input from 162 patrol deputies with the following demographics:

- 118 males and 44 females
- average age of 37.57 years (range: 27–56 years old)
- average of 11.78 years at LASD (range: 1–25 years)
- average of 6.46 years in patrol (range: 1–24 years)
- provided uniformed patrol functions in rural, urban, suburban, high desert, coastal, and inland areas

The survey responses provided insights on some trends and commonalities among the physical demands experienced by officers.

USE OF FORCE—DURATION OF PHYSICAL ACTIVITY

When reasonable force was needed to resolve a situation, 77.7 percent of the time, the event lasted 60 seconds or less with an additional 10.3 percent resolved within 90 seconds and 5.7 percent within 120 seconds. In essence, when reasonable force was used, 93.7 percent of the time, the physical activity lasted 120 seconds or less with a vast majority lasting less than 60 seconds.

BODY DRAG—WEIGHT OF PERSON MOVED

When it was necessary to restrain, drag, or lift a person (suspects, victims, etc.), 68.33 percent of the time, respondents reported the weight of the person to be between 160 and 300 pounds (73.6 kg and 136 kg), with over 54 percent weighing between 160 and 200 pounds (91 kg). This is consistent with 2018 Centers for Disease Control and Prevention (CDC) data indicating that the average male in the United States weighs 197.9 pounds, and the average female weighs 170.6 pounds.

On average, between 1960 and 2002, both men and women gained more than 24 pounds, with men gaining an additional 8 pounds and women gaining 7 pounds from 1999 to 2016, resulting in a total gain of 32 pounds for men and 31 pounds for women since 1960.

PARTNER CASUALTY DRAG

When "average" patrol duty gear (range 16.54 to 27.98 pounds depending on items carried) is included, agencies have reported the "average loaded" (basic patrol) weights for males and females assigned to patrol duties as 220.80 pounds and 173.68 pounds respectively.

> *While general physical fitness is important for health and recovery, programming of physical abilities and fitness training should be targeted to match actual job demands for optimal success of the officer and community.*

TABLE 1: USE-OF-FORCE DURATION

5–30 seconds	52.7%
35–60 seconds	25.0%
65–90 seconds	10.3%
95–120 seconds	5.7%
2–3 minutes	3.6%
More than 3 minutes	2.7%

Due to the aforementioned average weight changes in the populations served, recent conversations with SMEs centered around recommendations to raise the weight of the casualty drag to 200 pounds to more closely reflect the needs of populations served (both community and law enforcement partners). To assess strength of incoming recruits related to the casualty drag, a pilot study demonstrated that a vast majority of incoming recruits possessed the strength and skill required to drag a 165-pound dummy to state standards on day one of academy. SMEs and trainers agreed that with proper training and periodization during academies over 12 weeks or more, a casualty drag of 200 pounds was achievable.

CASUALTY DRAG PILOT STUDY:

In late 2019, a 165-pound body drag assessment on the first day of academy to CA POST academy graduation standards across two academy classes with a sample of 48 female subjects resulted in all female subjects being able to complete the task to state academy exit standards.

RUNNING DISTANCES

When respondents were asked to quantify the distances they ran (in response to emergencies, in pursuit of a suspect, etc.), 91 percent of the time the distance was 100 yards or less with 72 percent reporting 5–50 yards. Of note, only 0.6 percent reported running distances of 0.25 mile or more. These data again support the observation that a vast majority of foot pursuits may "feel" like they last "forever" but actually occur over relatively short distances.

CLIMBING OBSTACLES

When heights of fences climbed (wire/chain link, wood, wrought iron, solid) were surveyed, the most commonly reported height for each type of fence was in the 6- to 7-foot-high category at 44.8 percent, 45.6 percent, 35.5 percent, and 49.8 percent respectively.

CONCLUSION

Taken holistically, the data from these observations and other research projects demonstrate the patrol job function is primarily anaerobic and power based in nature versus aerobic and endurance based. While general physical fitness is important for health and recovery, programming of physical abilities and fitness training should be targeted to match actual job demands for optimal success of the officer and community.

IACP Officer Safety and Wellness Resources

FAMILY WELLNESS

- Law Enforcement Family Resources Webpage
- *How to Start a Law Enforcement Family Support Group*
- *Employee and Family Wellness Guide*

VIOLENCE AGAINST THE POLICE

- IACP Tribute to Slain Officers
- *Preventing Line of Duty Deaths: A Chief's Duty*
- *Law Enforcement Officers Killed by Felonious Assault in 2011*

IACP LAW ENFORCEMENT POLICY CENTER

The IACP Law Enforcement Policy Center provides guidance to assist agencies in developing policies and procedures. Topics include

- Critical Incident Stress Management
- Employee Mental Health
- Peer Support

INJURY REDUCTION

- Reducing Officer Injuries Study
- Final Report
  - Executive Summary
  - Infographic
  - Fact Sheet: The Importance of Tracking Injuries
  - Fact Sheet: The Impact of Fitness and Weight on Injuries
- Injury Reduction Infographic and Poster
- Traffic Safety Dashboard Decal and Postcard

TACTICAL SAFETY

- IACP-DuPont™ Kevlar® Survivors' Club®
- "Are You Ready for Duty" Toolkit & Poster
  - Officer Checklist
  - Officer Safety First Tip Sheet
  - Drive to Survive Tip Sheet
  - Supervisor Checklist
  - Vehicle Placement Tip Sheet

> *It comes down to courageous leadership from the top. Police chiefs need to send the message that it's okay to ask for help and outline how to do it.*
>
> – Chief Steven Casstevens

DID YOU KNOW?

- In France, the **suicide rate of police officers is 36 percent higher** than that of the general population. In the first six months of 2019, 24 French police officers died by suicide.
- In the United States, police officers are **more likely to die by suicide** than in the line of duty.
- Research conducted in Australia indicates that law enforcement officers are **less likely to use workplace mental health services** due to the lack of anonymity and trust and a belief that the services are inadequate and ineffective.
- During the average officer's career, he or she **will witness 188 "critical incidents."**
- In a 2018 survey of U.S. officers, **more than 8 in 10 officers** were aware of behavioral health services through their agency and **nearly 2 in 10 accessed services**.
- Frequent exposure to stress can have negative effects on job performance and quality of life for law enforcement officers.
- Operational **stress injuries cost** the Ontario Provincial Police **$3.5 million dollars** (in workplace insurance) from 2006 to 2012.
- Agencies are working to prevent suicide through proactive services. In a 2018 study of 110 U.S. law enforcement agencies from 30 states, **50 percent of the agencies utilize a peer support program**.

SUICIDE PREVENTION AND AWARENESS

- National Officer Safety Initiatives: The National Consortium on Preventing Law Enforcement Suicide
- Issue Brief: Evidence-Based Practices for Suicide Prevention in Law Enforcement
- *The Signs Within: Suicide Prevention Education and Awareness* – Executive Overview Report
- *Critical Components of Officer Mental Wellness and Resiliency* – Family Brochure
- Officer Suicide Prevention and Awareness Poster
- *Breaking the Silence: A National Symposium on Law Enforcement Officer Suicide and Mental Health*
- Sample Suicide Prevention and Awareness Programs

Reducing Officer Deaths and Serious Injuries Related to Traffic Duties

BY
Mark W. Seifert, Director of Emergency Management,
Campus & Public Safety Department, University of Delaware

ON AUGUST 10, 1869, PATROLMAN JOHN A. BRANAGAN, A MEMBER OF THE NEW YORK POLICE DEPARTMENT (NYPD), WAS WORKING ON A TRAFFIC DETAIL AT THE HAMILTON FERRY IN NEW YORK CITY.

While assigned to his post, he was assisting a horse-drawn lumber truck as it attempted to back out of the ferry yard. Patrolman Branagan was struck by a load of falling lumber from the truck when the horses abruptly changed direction. Branagan was transported to his home where he succumbed to his injuries. Patrolman Branagan was a 12-year veteran of the NYPD and left behind a wife and four children. According to the Officer Down Memorial Page, his death was one of the first line-of-duty deaths attributed to a traffic assignment.

On November 15, 2019, Deputy Sheriff Stephen Reece, assigned to the Cheatham County Sheriff's Office (CCSO) in Tennessee, was traveling on Highway 41A South near Oak Plains Road at approximately 2:13 p.m. Deputy Reece's patrol SUV entered the intersection and was involved in a crash with another vehicle. Deputy Reece died at the crash scene. He had served with Metro Nashville Police Department for 18 years before being hired by CCSO. He was a U.S. Marine Corps veteran of Operation Desert Storm and is survived by his wife and two children.

Two officers killed in the line of duty 150 years apart. What can we learn from the tragic deaths of Patrolman Branagan and Deputy Reece? One thing is certain, the family members, survivors, and their fellow officers would want us to honor their memories by reflecting on their deaths so that we might prevent future tragedies. We owe it to these officers, and to the more than 21,000 officers whose names are inscribed on the wall at the National Law Enforcement Officers Memorial, to leverage the many best practices and research that have emerged and can be put into practice in police departments.

Jim Collins, author of *Good to Great*, met with police leaders and articulated how police departments can transition from "good" to "great." He spoke about the flywheel concept. This concept refers to the relentless, steady push toward a goal. Imagine a flywheel that is 30 feet in diameter, 2 feet thick, and weighs 5,000 pounds. The police leader's job is to get the flywheel rotating as fast and as long as possible. Eventually, it will result in sufficient momentum to ensure positive change. Collins's flywheel concept remains applicable today. It can be adopted in police departments with a leader's steady hand and a concerted effort focusing upon officer safety through leadership, training, discipline, policy, and other controllable factors as it relates to officer safety on the road.

LEADERSHIP PROMOTING BEST PRACTICES—SNOHOMISH COUNTY SHERIFF'S OFFICE

One agency that has used the flywheel concept is the Snohomish County, Washington, Sheriff's Office (SCSO). Undersheriff Robert Beidler, a proactive leader, recognized that traffic-related incidents have continually been one of the leading causes of death for law enforcement officers each year. Unfortunately, in 2015, the sheriff's office had been involved in 11 on-duty collisions that resulted in significant injuries to citizens and deputies. Total cost of the crashes exceeded $2.4 million in medical, legal, and related costs.

Undersheriff Beidler instituted a series of significant initiatives to change the mind-set and habits of department personnel. The SCSO introduced a new philosophy to their officers: "Get there safe and get there alive." This was a change from the older principle of "Get there first, get there fast."

The focus included a series of efforts including the following:

- Supervisors were required to attend a presentation by the mother of two girls killed in a police pursuit.
- Employees embraced the principles of Below 100—an internationally recognized initiative that provides innovative training and awareness in an effort to identify

RESOURCES FOR LAW ENFORCEMENT LEADERS

Please visit this article at Police Chief Online for links to the below resources.

- Below 100 website
- Digital Edition: Officer Safety on the Road (*PoliceOne*)
- Highway Safety & Survival – 6 Essential Steps for First Responders webinar (Lexipol)
- IACP Officer Safety and Wellness webpage
- *Is Today Your Day?* YouTube video (IACP and New York State Police)
- "Officer Safety: Reducing Injuries and Fatalities for the Law Enforcement Officer on the Front Lines of Traffic Safety" (Sheriff John Whetsel and Ed Hutchison) podcast.
- *Officer Safety and Wellness Group Meeting Summary: Vehicle Operation, Risk Management, and Problem-Based Learning* (Darrel Stephens, Mora L. Fiedler, and Steven Edwards)
- "Police Week: Honor the Fallen by Training the Living" (Dale Stockton).

the leading causes and current trends in preventable line-of-duty deaths and injuries.

- A more restrictive pursuit policy was adopted with emphasis upon officer safety and accountability.
- A Driving Review Board was created that reviews all pursuits and on-duty collisions with follow-up feedback and safety tips to officers.

The SCSO has seen significant results in their efforts to hold officers accountable and reinforce traffic safety at all levels of the organization. In 2016, total on-duty crashes decreased 16 percent, and preventable collisions were reduced by 13 percent. Further, crash data showed zero significant personal injuries to employees or civilians in 2016. The SCSO was recognized for these efforts in 2017, when they were awarded the Peter K. O'Rourke Special Achievement Award from the Governor's Highway Safety Association.

BELOW 100

What started as a conversation among police leaders at a training conference in 2010, has grown into a major effort to turn the tide to bring the number of officers killed per year to below 100. On average, there are more than 150 U.S. officers killed in the line of duty each year—many of these deaths occur on roadways. Below 100 has five core tenets:

- Wear Your Belt
- Wear Your Vest
- Watch Your Speed
- WIN—**W**hat's **I**mportant **N**ow?
- Remember: Complacency Kills!

Keep officers safe on the road.
Motor vehicle-related incidents are a leading cause of on-the-job deaths for law enforcement officers in the U.S.
There were more than 750,000 law enforcement officers in 2012.[1]
Officers spend many hours behind the wheel and face increased risk when responding to emergency calls.
564 officers died due to vehicle crashes, 31% of all line-of-duty deaths from 2005-2016.[2]
Of the 152 fatal crashes from 2012-2016, almost half were single-vehicle events.[2]
Officers can prevent crashes and injuries when they:
Buckle Up
Slow Down
Focus
Remain Calm
Visit www.cdc.gov/niosh/topics/leo to access resources to promote safety behind the wheel.
Drive to arrive alive.
Visit NLEOMF.org to learn more about making law enforcement safer for those who serve.
CDC NIOSH
National Law Enforcement Officers Memorial Fund

Supported by numerous police organizations, police training associations, multiple state chiefs' associations, and working in collaboration with the Officer Down Memorial Page, Concerns of Police Survivors, and the Police Foundation, among others, Below 100 is making a positive impact in policing. Preliminary 2020 data regarding fatalities from the National Law Enforcement Officers Memorial reveals positive trends, as traffic-related deaths are down approximately 25 percent. However, there is still considerable work that needs to be accomplished. To learn more about the Below 100 organization and to take advantage of the classroom or online training, various resources, and featured videos, consult the Below 100 webpage at www.Below100.org.

Gordon Graham, a retired California Highway Patrol officer and a widely recognized law enforcement trainer, has been instrumental in supporting the Below 100 initiative and has produced several short videos suitable for roll call that are available on the Below 100 website. Graham commented,

> *For more than 30 years I have tried to improve officer safety by extolling the virtues of learning from our past mistakes or, more specifically, 'predictable is preventable.' Below 100 has effectively taken this to a new level with a powerful message that challenges every member of policing to take individual and collective responsibility for their actions. It's a powerful concept and it's working. I'm proud to support this program.*

Below 100 began in 2011 and hit full stride in 2012. Since that time, a dedicated group of volunteer trainers have presented Below 100 training that centers on areas under an officer's control—areas that have been disproportionately responsible for taking many lives and ending countless careers. Below 100 is not about a specific number. It's about every officer, regardless of rank or assignment, accepting individual and collective responsibility for officer safety.

In a recent webinar hosted by Lexipol entitled "Reducing Risk on the Road: How to Keep Officers Safe During Roadway Operations," the following recommendations were offered as important behavioral and policy changes:

- High-visibility safety equipment (reflective clothing, high-visibility surface markings on vehicles, etc.)
- Right-side approaches
- Encouraging officers to move their traffic stop off the highway to an alternative safe location
- Nationwide Move Over laws and in-vehicle alerting

Police chiefs are tasked with incredible responsibilities on many different spectrums in advancing public safety in their communities. Law enforcement leaders are encouraged to collaborate with the International Association of Chiefs of Police, the National Institute for Occupational Safety and Health, Below 100, Lexipol, the Emergency Responder Safety Institute, and the National Highway Traffic Safety Administration in redoubling their efforts to reduce line-of-duty deaths, especially as they relate to motor vehicle–related incidents. With a concerted effort and laser focus, the path of progress can continue, and the goal of Below 100 can be achieved.

Research abounds on topics related to law enforcement and criminal justice, and it can be difficult to sift through it all. Informer breaks down three studies for law enforcement leaders to help keep them up to date.

BODY-WORN CAMERA ACTIVATION COMPLIANCE

Body-worn camera (BWC) technology continues to interest both researchers and practitioners in law enforcement. However, since BWCs do not record on a continual basis, their effectiveness relies heavily on when they are activated and deactivated. With this critical factor in mind, researchers analyzed activation patterns during the early stages of BWC deployment at the Anaheim, California, Police Department.

The study included 40 officers with an average of 16 years of policing experience and an average age of 41. Participants comprised 67.5 percent patrol officers, 15 percent traffic officers, and 17.5 percent special officers. Data collection and analyses were carried out through a collaboration between researchers from Anaheim Police Department and Urban Institute. The research team compared BWC metadata to officer event activity data, assessing variations among officers and changes in activation rates.

Although department policy required activation for all enforcement contacts, individual officer activation rates varied widely. In contrast to other studies of this type, overall activation rates increased steadily throughout the 6-month data gathering period. Activation rates began at 4 percent in the first two weeks and eventually reached 53 percent. The study also found that activation rates were considerably higher for violent crimes (44.7 percent) and property crimes (35.4 percent) than for traffic-related activities (22 percent). Departments seeking a deeper understanding of the challenges of effective BWC implementation would benefit from the findings and recommendations from this study.

Daniel S. Lawrence et al., "Activation of Body-Worn Cameras: Variation by Officer, Over Time, and by Policing Activity," *Criminal Justice Review* 44, no. 3 (September 2019): 339–355.

ASKING THE RIGHT QUESTIONS FOR EFFECTIVE CRISIS MANAGEMENT

Police leaders are often called upon to manage complex crisis incidents—either on their own or in coordination with other agency leaders. Implementing the best response requires gaining an accurate understanding of the situation from incomplete, often conflicting, information. Gaining that understanding comes down to asking the right questions.

A research team in the Netherlands analyzed the kinds of questions necessary for making sense of unfolding crises. The study confronted multi-agency teams with two terrorist attack scenarios and completed six response exercises. Participants were members of Dutch tactical response teams and included personnel from various sectors: police, fire, health services, municipal services, and military. Researchers provided each team with scenario information, then audio-recorded the team's discussions and responses and coded the audio data for analysis.

Assessing the recorded data, researchers identified three types of sensemaking questions. Situational questions ask, "What is happening in this crisis?" Addressing this question included coordinating information sharing, as well as assessing the reliability of available information. Identity-oriented questions ask, "Who am I in this crisis?" The response team members had to quickly clarify their roles in relation to one another and the crisis itself. Action-oriented questions ask "How does it matter what I do?" connecting actions with plans, procedures, and post-incident evaluation. The study offers insights for improving emergency planning, training, and preparation.

Jori Pascal Kalkman, "Sensemaking Questions in Crisis Response Teams," *Disaster Prevention and Management* 28, no. 5 (2019): 649–660.

Read it at https://doi.org/10.1108/DPM-08-2018-0282.

CONSIDERATIONS FOR SURVEILLANCE REGULATION AND ALGORITHMIC ACCOUNTABILITY

Technologies such as facial recognition, machine translation, and search engines have been scrutinized due to the challenges observed from their use. Algorithmic systems have indicated discriminatory harms in surveillance, as well as signs of reinforcing disparities in underlying datasets, leading to unfavorable long-term impacts on the community. Criminal justice leaders are holding algorithmic systems more accountable, but questions remain about which interventions are most effective. The current study aims to close this gap by examining surveillance regulation, a related area of technology management.

The researchers studied the 2017 Seattle Surveillance Ordinance (landmark legislation in this area) and examined the policy language of five other surveillance ordinance efforts to determine what elements of Seattle's ordinance are consistent with laws in other cities. The researchers observed that surveillance regulations are primarily concerned with the data collection function as opposed to data analysis processes. The study's recommendations to strengthen implementation of technology oversight efforts follow:

- Add review criteria for the processing, analysis, and classification functions performed on surveillance data.
- Include guidance for distinguishing between types of algorithmic systems to enhance regulatory efforts and identify potential harms.
- Consider adopting lessons from the policy making of autonomous vehicles and weapons.

Meg Young, Michael Katell, and P. M. Krafft, "Municipal Surveillance Regulation and Algorithmic Accountability," *Big Data & Society* (July–December 2019): 1–14.

Read it at https://doi.org/10.1177%2F2053951719868492.

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Face-to-Face Communication Reenvisioned

WITH THE SPREAD OF SOCIAL MEDIA AND CONSTANTLY ADVANCING COMMUNICATION TECHNOLOGIES, LAW ENFORCEMENT AGENCIES ARE CONSTANTLY EXPLORING NEW WAYS TO SPEAK TO THEIR COMMUNITY MEMBERS, INCLUDING COMMUNICATION THROUGH COMMON PLATFORMS SUCH AS TWITTER AND FACEBOOK.

While many agencies use social media to gather information from the public on criminal activities and to share important notices, the administrators of the Pinole, California, Police Department have introduced a new face-to-face way for the public to communicate with officers.

The Video Reporting System is the result of a strategic planning meeting about innovation and enhanced ways to engage with the residents of Pinole. To improve the agency's community engagement, Chief Neil H. Gang led an effort to implement a service that would allow community members to report nonviolent crimes and suspicious activity without leaving their homes or offices—yet still connecting with an officer.

Using applications such as Facetime and Skype, as well as smart video devices like Facebook Portal, community members can virtually contact officers from nearly any location. Since the system's launch in February 2019, the service has been offered two days every week for limited hours; however, administrators hope to adjust the hours upon evaluation of the service.

To ensure the effectiveness of the system, there are certain requirements for reports made via the video reporting system:

- The crime must not be an emergency or incident needing immediate officer response.
- The user is at least 18 years of age.
- The user has a working email address.
- The crime occurred within the City of Pinole, but not on the freeway.
- Evidence does not need to be collected.

Although there were initial concerns about the community adopting this new way of filing police reports and engaging with the officers, community members have expressed

their appreciation toward the police department's new system. Chief Gang said, "Our citizens have advised how user friendly this platform has been, and they really have praised the level of engagement that they have had with the officers on the other end."

Users have also praised the system's convenience. The department has received feedback from community members explaining that they value the ability to see and engage with a live officer without having to travel to the department. Chief Gang stated that this has also been advantageous to those who do not reside in the community but are traveling through.

Not only have community members shown their support for the video reporting system, the Pinole Police Department officers have also found it to be a positive experience. Upon hearing the advantages of the system, Chief Gang said that officers instantly took to the idea of becoming community outreach officers.

Due to their enthusiasm, guest officers are scheduled to answer questions to a live audience, creating more opportunities for engagement between officers and those they serve beyond crime reporting.

Because the Pinole Police Department is always searching for innovative ways to better serve their community, law enforcement personnel have been working toward obtaining their American Sign Language certification to make the community engagement program more inclusive.

The Pinole Police Department is dedicated to being visionary and evaluating different ways to improve the level of service that is provided to its community. "We observe and research available technology, and we determine what we best can utilize that's going to help us provide better service for our community and make us more efficient as an organization," Chief Gang said. "We feel this next-gen community engagement tool is just another mechanism to assist us in providing exemplary law enforcement services for our community."

RECOMMENDATIONS

Pinole Police Department offers two key tips for other agencies seeking to try video reporting in their jurisdictions:

- Ensure all platforms to be used sync with your agency's current IT capabilities.
- Conduct extensive community outreach prior to initiating the program.

Does your agency have an initiative or project you'd like to see featured? Email us at **EDITOR@THEIACP.ORG.**

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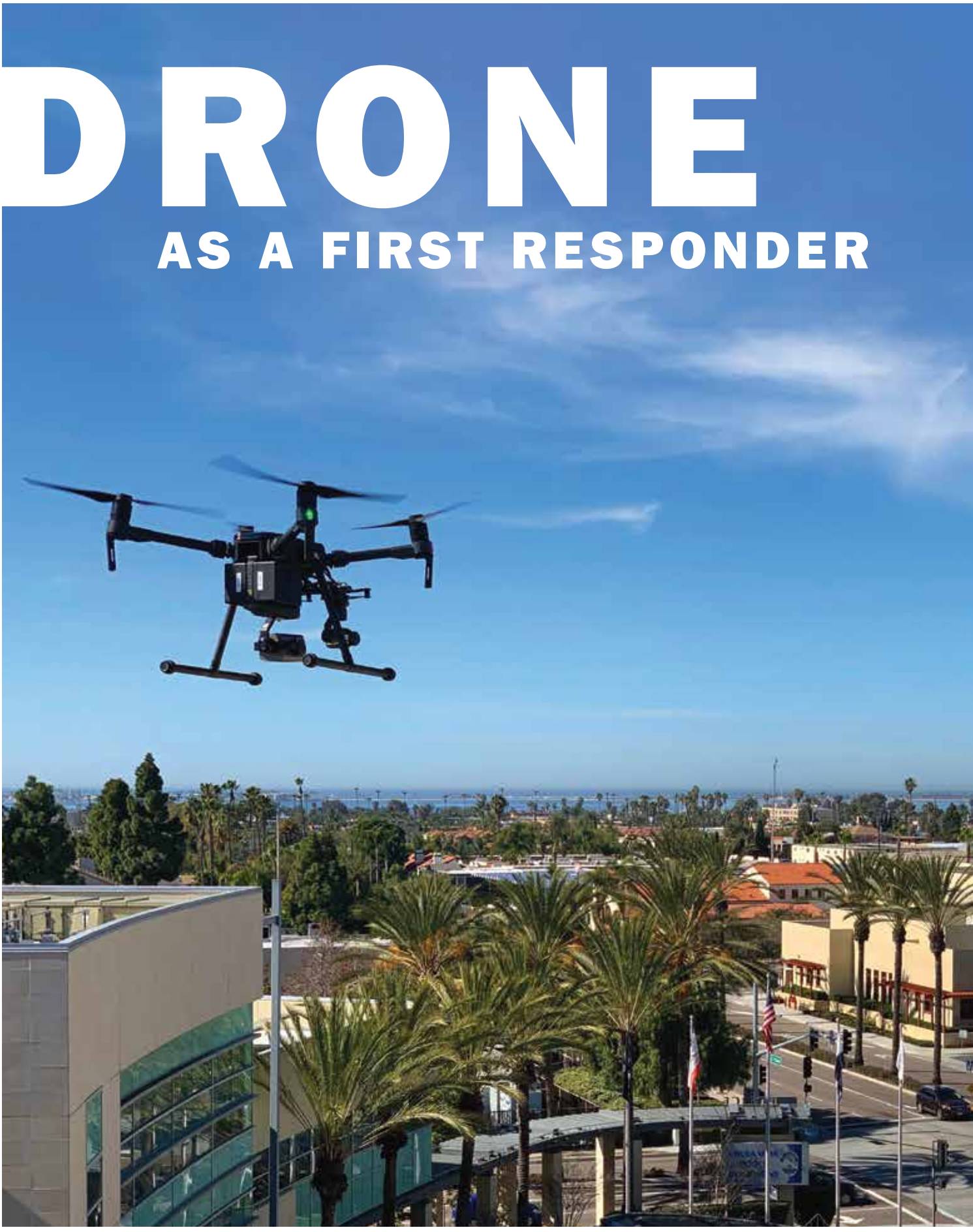


Photo courtesy of Chula Vista Police Department, California.

BY
Vern Sallee, Captain, Patrol Operations, Chula Vista Police Department, California

THE NEW PARADIGM IN PUBLIC SAFETY

THE 911 CALLER WAS CALM, CONSIDERING HE WAS REPORTING THAT A MAN WITH AN OBJECT THAT LOOKED LIKE A GUN WAS ACTING STRANGELY OUTSIDE THE TACO SHOP. The caller noted that the man was waving the pistol-shaped object around and frightening people. The caller said he thought the object could be a lighter, but patrons were scared. As the dispatcher questioned the caller, officers had no indication of the dangerous call developing nearby. Precious seconds ticked by as the dispatcher gathered information from the caller to share with responding officers.

Any other time, the dispatcher and caller would run through critical questions before the first police officer knew of the call via computer or radio. But, on this day, another officer was listening to the 911 call and immediately recognized the need to act. Fortunately, the Chula Vista Police Department (California) is testing and evaluating innovative technology that directly impacted the safe resolution of this incident.

During this incident, a police officer was utilizing a prototype Live911 software feed that is geographically tied to the range of the drones he controls from the rooftops of local buildings. By scanning incoming calls via Live911, the officer can remotely launch an unmanned aircraft system (UAS or drone) from one of two strategically located launch platforms. Critical seconds were saved because he already knew the nature and location of the call and the range from the nearest drone launch site.

Using a standard desktop computer, the officer could remotely launch the drone, which was already primed for flight on the roof of the police station. The drone flew about a half a mile to the call and fed live video to officers and supervisors. The time it took from the initial 911 call until the UAS was overhead providing live video feed of the suspect to responding officers was 84 seconds—a full five minutes before officers arrived on scene.

Once the drone was overhead, the teleoperator was able to scan the scene using a powerful 30x zoom camera while still listening to the caller. He identified the suspect seated at a table in front of the shop with several people gathered nearby. The teleoperator was able to broadcast via police radio the layout of the parking lot and building and the actions of the people in the area. He also zoomed in and could see a black pistol-shaped object in the suspect's hand.

Officers used the added time provided by the drone coverage to stage nearby, watch the live video, and request different views to plan approach tactics. The drone went unnoticed by the suspect and patrons due to its small size and relatively quiet operation. The teleoperator watched as the suspect used the gun-shaped object to light a cigarette, thereby confirming with near certainty that it was not a gun. The officers moved in with this critical new information and were able to detain the suspect safely.

The resulting investigation reconfirmed that the object was not a gun but a lighter. The suspect was subsequently arrested for being under the influence of narcotics. The call could have ended tragically if officers with less information and less experience had rushed to the scene and confronted the man with a gun-shaped object. In this incident, the proactive use of a drone provided critical information to responding officers and supervisors, thereby improving officer safety, public safety, and even suspect safety. This incident is just one of many real-world examples of the strategic and tactical value of the groundbreaking concept of Drone as a First Responder (DFR) operations, which is being pioneered by the Chula Vista Police Department (CVPD).

DECISION QUALITY DATA FOR FIRST RESPONDERS

DFR is a new model in policing that integrates the use of drones into routine operations. While drones are not new in policing, most agencies use

CVPD's drones, directed by tele-operators, can send live video to officers and zoom in to identify critical details.

them reactively. A reactive scenario may involve having an officer with an FAA Part 107 license deploy a drone from a patrol car once a team arrives to search for a suspect or a missing person. While useful, this model is inefficient and fails to live up to the drone's full potential as an integrated public safety tool.

CVPD used drones in a reactive model for years, but innovative leaders in the organization partnered with technology companies to reimagine the use of drones in public safety. Rather than being solely reactive, leaders imagined using drones that are fully integrated into an agency's standard response workflow the moment an emergency call is received. The concept of routinely tasking a drone to provide decision quality data (DQD) via a live high-definition video feed to first responders is the cornerstone of the DFR program.

DRIVEN BY THE NEED FOR DE-ESCALATION TOOLS

Chula Vista, California, is in San Diego County and has a population of 271,651 and is served by 249 sworn officers. Chula Vista is approximately 52 square miles in size and consists of low rolling hills stretching from the San Diego Bay to the low foothills of the Jamul and San Ysidro Mountains. There are relatively few tall buildings, which provide for few obstacles in the airspace. There are no airports within the city, and CVPD relies on larger allied agencies to provide air support during critical incidents.

The San Diego Police Department and San Diego Sheriff's Department are the two nearest agencies with air support units. While both agencies are generous with their air assets for emergency calls, they are not always available. With airframe costs in the millions, along with operating expenses of roughly $1,000 an hour, a helicopter program is cost-prohibitive for Chula Vista, as it is for most small to mid-size agencies.

On the other hand, the benefits of air support have been apparent for decades. Live video and radio assistance from trained aerial observers provide critical information to ground units, resulting in safer tactics and better public safety outcomes. Facing the reality that CVPD could never afford manned air support, its leaders considered how air support could be provided by using drones. They realized by leveraging emerging drone technology, any size agency could gain many of the benefits of traditional manned air support at a fraction of the price. Moreover, costs will continue to fall as technology and automation improve.

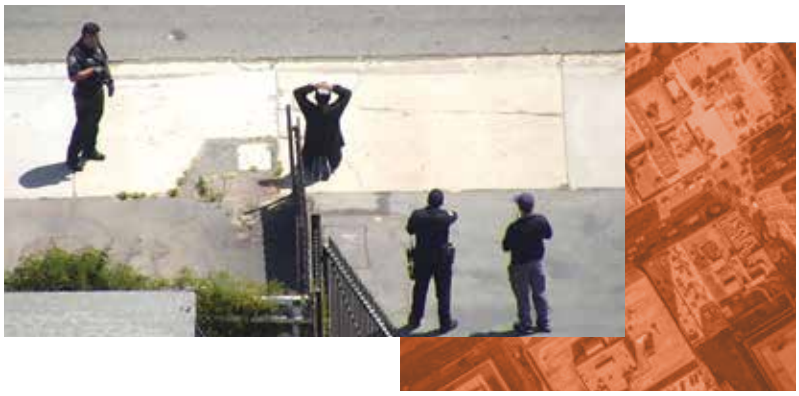
CVPD began its drone program in 2015 with plans for Part 107 flights on a limited basis like pre-planned search warrants and searching for missing persons. Shortly after that, in September 2016, the officer-involved shooting of a man during a mental health call in a nearby city spurred days of violent protests. Coupled with the context of U.S.-wide discussions about police use of force and de-escalation, the incident spurred discussions about how CVPD handles such calls

and what could be done to provide more intel to officers—so they could plan better tactics. Chief Roxana Kennedy asked CVPD's leadership team to seek innovative ways to get more information to officers on routine calls so they could use the best tools and tactics for better outcomes.

Captain Fritz Reber oversaw CVPD's drone program at the time and contemplated what would change if drones could arrive before officers on routine calls and provide real-time video. Real-time video providing DQD would allow officers to better consider tactics, tools, and resources while en route to the scene. This concept has worked for decades with police helicopters, but it had not been attempted using drones on routine calls.

Captain Reber started researching drone technology and found a technology company that provides a software platform for remote drone operation. Reber envisioned using a remotely operated drone to respond to routine calls. A drone could be launched from one of several strategically located launch sites and teleoperated by a trained police officer. In theory, this fully integrated approach would proactively provide aerial support with live DQD and observer support to officers at a fraction of the cost of a helicopter program.

The provider, Cape Aerial Telepresence, a relatively small startup company, immediately recognized the concept's promise. They set up a proving ground in Ensenada, Mexico, where there is less air traffic and fewer regulatory barriers than in the United States to test and refine their software development. The Ensenada Police Department partnered with the company and deployed the DFR concept as a pilot program before rolling out the technology with CVPD. Ensenada Police attributed more than 500 arrests and a 10 percent decrease in crime to the pilot program, which was enough validation for CVPD to start the first DFR program in the United States.



Real-time video provides decision quality data to officers and allows remote observation and support during incidents.

FEDERAL AVIATION ADMINISTRATION UAS INTEGRATION PILOT PROGRAM

On October 31, 2017, U.S. President Donald J. Trump issued a presidential memorandum directing the secretary of transportation to work with the administrator of the Federal Aviation Administration (FAA) to establish a UAS Integration Pilot Program (IPP). The objectives of the IPP are three-fold:

1. Test and evaluate various models of state, local, and tribal government involvement in the development and enforcement of federal regulations for UAS operations.
2. Encourage UAS owners and operators to develop and safely test new and innovative UAS concepts of operations.
3. Inform the development of future federal guidelines and regulatory decisions on UAS operations nationwide.

The FAA worked quickly to plan and launch the UAS IPP and solicited proposals from throughout the United States to test innovative commercial drone uses to inform the FAA on regulatory changes necessary to fully integrate commercial drones into the National Airspace System (NAS). The San Diego region is rich in aerospace history and was perfectly positioned to apply to be one of the IPP testing sites. Moreover, the area has a long history of highly effective public, private, and regional partnerships.

CVPD's work on its UAS program and its partnership to prototype the DFR concept meant it was uniquely positioned to present a compelling use case in the IPP. While building its drone program, the department focused on community outreach and ensuring policies and objectives were in place well before the first drone was sent aloft. CVPD's outreach efforts included holding community forums, meeting with community leaders, meeting with the local ACLU, and opening doors to the press to discuss how drones could benefit public safety.

Based on community feedback, strong privacy protocols and prohibitions on routine patrol, arming drones, or surveillance were codified in CVPD's UAS policy. The department also put information about the program on its website, including a frequently asked questions (FAQ) section, a link to the UAS policy, and a contact email

Above: Experienced police officers teleoperate drones and communicate critical information to officers on the ground.

Right: Drone footage can provide up-to-date location information for responding officers, as in this case of a car aggressively pursuing a motorcyclist.

for the UAS team leaders. This outreach and transparency helped build community trust, which gave CVPD credibility and the public's confidence, faith, and support to explore innovations like DFR.

The City of San Diego's Homeland Security Department served as the lead program applicant for the San Diego Regional IPP, which put together a coalition of more than 20 regional organizations that signed on to support the submission. Government entities like the City of San Diego, City of Chula Vista, and the Port of San Diego, to name a few, quickly signed on to the project. Additionally, major companies (e.g., Qualcomm, AT&T, Uber, Intel) signed on to the IPP bid as private partners, as did some smaller start-up companies (e.g., Cape, GE Ventures, Airmap).

On May 10, 2018, the San Diego IPP Coalition announced it was selected as one of the 10 IPP test sites. CVPD's DFR project was a vital component of the San Diego IPP submission and stands as the only law enforcement IPP use case in the United States. Chief Kennedy authorized staff to plan and fully implement CVPD's DFR IPP strategy. With help from partners at the San Diego IPP and high-level FAA administrators, CVPD began to seek approval for operational solutions and to obtain expedited Certificates of Waiver or Authorization (COA).

INTEGRATION OF DFR INTO ROUTINE PATROL OPERATIONS

After months of testing and planning, CVPD officially began DFR operations on October 22, 2018. This concept had never been attempted before and all public, private, and federal partners were in uncharted territory. While CVPD has always been a forward-leaning agency concerning technology and innovation, integrating DFR into daily patrol operations was a challenging endeavor. However, the prospect of improving officer safety and public safety and enhancing opportunities for de-escalation through better data and tactics spurred CVPD leaders to dedicate time and resources toward the project's success.

Among the challenges was allocating the resources needed. There was no dedicated funding or budget to expand to DFR—the project was funded in part by asset seizure funds, the Chula Vista Police Foundation, and salary savings. The program was led by officers, sergeants, and lieutenants as a collateral duty and sometimes on overtime. Some of the early hurdles included training FAA Part 107 pilots, creating IT infrastructure support, building geofences for the drone, and testing the flight area for areas with weak signals or signal drops so hazards could be mitigated. CVPD also worked closely with the FAA on a COA, so pilots and teleoperators could comply with FAA regulations for Chula Vista's airspace.

CVPD's DFR program was first established at the police station, located in the highest call for service area of the city. In consideration of current FAA regulations and flight safety, the COA requires a pilot in command (PIC) to have constant visual contact with the drone and airspace. In Chula Vista's case, the PIC is located on the roof of the police department. The PIC handles the flight preparation and maintenance of the drone, changes batteries, and keeps the drone in a ready state to fly. The PIC also maintains visual awareness of the operational airspace with the ability to take over the drone in the event of a safety problem or conflict in the airspace. The teleoperator of the drone is located several floors below with a desktop computer and a large screen by which he or she can operate the drone remotely.

DFR PROVED TO BE A VALUABLE ADDITION TO PATROL RESOURCES BY PROVIDING LIVE STREAMING VIDEO AND INCIDENT COORDINATION TO FIELD RESOURCES.

The teleoperator can launch the drone within a predetermined geofence for each launch site. The geofence controls the minimum and maximum altitudes and the flight range and prevents the drone from crashing into known ground obstacles within the airspace. When the drone encounters a geofence barrier, it stops or goes around or over it if possible. The teleoperator also controls a 30x optical zoom camera that can scan and zoom in on an incident. The software allows live video to be sent to as many as 50 mobile devices, including those used by responding officers, supervisors, or command staff.

The initial range of the geofence was about a mile around the station with a PIC and teleoperator ready to dispatch the drone to Priority 1 and Priority 2 calls. Almost immediately, DFR proved to be a valuable addition to patrol resources by providing live streaming video and incident coordination to field resources. Initially available four days a week for 10 hours, the drone responded to several calls a day as operators considered the best way to fully integrate drones into routine patrol operations.

Some early successes involved disturbances involving persons in psychological distress. These types of unpredictable calls often require a cautious approach and the coordination of additional resources for a successful resolution. On these

Top right: A CVPD drone rests on rooftop launching pad.

Top left: Drones can be deployed to help officers locate suspects.

incidents, the teleoperator, who is a police officer, was able to get a drone on scene before officers arrived and provided critical information necessary for effective de-escalation and safe resolution of the calls.

Through trial and error, protocols were developed to allow the teleoperator to convey critical information to officers, such as the location of a subject and whether subjects were an immediate threat to others. The teleoperator, acting as a quasi-incident commander, can also provide an accurate description, location, and direction of travel and can zoom in to see if subjects possess a weapon.

As an experienced police officer, the teleoperator is tasked not only with flying the drone and operating the camera, but also with communicating critical information to responding officers via radio and advising them of the best approach and tactics. Sometimes this information allows officers to slow the call down if the subject is not an immediate threat to themselves or others. Through these efforts, CVPD has proven that DFR provides critical DQD to responding officers, giving them the right information to plan better tactics and achieve better call outcomes.

Since launching DFR, CVPD has worked closely with the FAA to refine the concept and alleviate safety concerns. The IPP has allowed CVPD to work with the FAA on essential waivers to expand the program. In May 2019, the FAA granted CVPD the first Beyond Visual Line of Sight (BVLOS) waiver for drone flight over an urban area, and, in July 2019, the FAA modified CVPD's COA to allow CVPD to add a second launch site.

To date, CVPD has flown more than 1,144 DFR flights in response to calls for service, contributing to 158 arrests. Moreover, the drone is first to arrive on scene on almost half of the calls within its range, and its average response time is just under two and a half minutes. Perhaps most surprising to CVPD's team is the teleoperator has been able to respond to and clear 174 calls without dispatching ground units, thereby keeping key ground resources available for other calls.

CURRENT DFR LIMITATIONS

The success of CVPD's DFR program is exciting, but there are limitations.

- The presence of a PIC with direct visual observation is still required under current Part 107 rules and CVPD's COA, but this will likely change with technology as the FAA integrates drones into the NAS over the next few years.
- Battery life on most commercial drones is still limited to less than 25 minutes, but better solutions are on the horizon.
- Technologies like "sense and avoid" have become increasingly sophisticated and will help automate flights and improve safety, but have yet to be thoroughly evaluated by the FAA.
- DFR must become more automated and integrated into computer-aided dispatch systems to reduce costs and bring scalability.
- Current regulations require one pilot per drone. The concept of one pilot with the ability to fly many drones will deliver scalability via "One to Many" flight operations, a concept currently under review by the FAA.
- Current FAA Regulations require drone pilots to maintain continual visual line of sight (VLOS) of the aircraft at all times. This is extremely limiting in tactical situations where terrain or other obstructions or structures may limit visibility, especially when the pilot cannot risk being exposed, such as during an active shooter incident. CVPD is working with the FAA to pioneer close proximity low-altitude (CPLA) flights with tactical drones authorized for BVLOS flight at ground level under certain conditions.

NEXT STEPS FOR DFR AND CVPD'S DRONE PROGRAM

CVPD's efforts and the work of its technology partners with the FAA have demonstrated that DFR is a groundbreaking new concept that can improve public safety and promote de-escalation by streaming live DQD to first responders. While DFR is technically still a pilot program, CVPD is already planning how to sustain and expand operations to serve the entire city via multiple launch sites in the near future. On January 3, 2020, CVPD expanded DFR operations to seven days a week and began extending flights into evening hours to even more fully demonstrate the utility and flexibility of the program.

CVPD envisions a future "aerial suite" of on-demand drone services, not just for DFR, but for CPLA and post-investigation uses. DFR (strategic/tactical), CPLA (tactical), and drone-enabled photogrammetry for investigations will eventually be routinely integrated into workflow via FAA Part 107 pilots or a teleoperator. The inherent advantage of teleoperation is not only the ability to share DQD, but the enabling of highly specialized field personnel to focus on higher-level public safety tasks at hand rather than being drone pilots. CVPD's DFR program has demonstrated that highly automated and intelligently integrated drone ecosystems may be used to supplement and enhance field operations and improve public safety.

While still in its inception, the DFR concept should eventually be considered for all-hazards response and integrated into local government operations as a single shared asset to save costs. While DFR may be prioritized for police, fire, and other emergency response operations, the costs are largely fixed once the program is up and running. Police, fire and other first responders are often assigned to the same incidents and could share live video and coordinate responses. Since costs are fixed once the launch points and teleoperator are staffed, the cost to expand DFR from police operations to all-hazards operations is negligible, which brings cost-saving economies of scale to a local government. In addition, the cost-effectiveness of drones opens up the possibility of aerial support and intelligence to agencies that could otherwise never afford a helicopter program, which are, by their nature, highly technical and expensive. With DFR, agencies can respond to far more routine calls and arguably have a greater impact than even the most robust manned helicopter programs.

While CVPD does not envision a time when drones will fully replace police helicopters or officers on the ground, DFR has the potential to be one of the most transformative concepts in policing in decades. FAA regulations are invariably changing to expand the use of commercial drones in the NAS, and a UAS Traffic Management (UTM) system is in the works. The scale has tipped in favor of public safety integration of drones into routine operations, and the role of drones will accelerate until fully evolved into an entirely new paradigm of public safety service delivery.

IACP RESOURCES

- Unmanned Aircraft Model Policy
- Recommended Guidelines for Use of Unmanned Aircraft

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- "Remote Drone Dispatch: Law Enforcement's Future?" (article)

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THREE NOVEL WAYS TO USE ALPR

BY
Andrew D. Dasher, PhD, Threat and Risk Analyst, University of Texas Police – Houston

Leveraging License Plate Readers for Crime Prevention and Solvability

AUTOMATED LICENSE PLATE READERS (ALPR) ARE BEING UTILIZED ACROSS THE WORLD IN A VARIETY OF WAYS AND FOR MYRIAD PURPOSES. Law enforcement has primarily used these devices as a way to facilitate traffic enforcement, such as looking for expired plates, or to help identify vehicles where the vehicle itself is associated with the crime, such as an auto theft, or to find a wanted person. These use cases have been around for over a decade, and there is anecdotal evidence to suggest that ALPR are somewhat successful in aiding officers in their daily duties when used in these limited applications. While these successes are encouraging, law enforcement is merely scraping ALPR's potential. Political and privacy concerns aside, ALPR can be leveraged in proactive crime prevention efforts as well as in increasing crime solvability factors.

Previous studies have shown ALPR's potential for solving major crimes. Currently, there are a lack of studies that have explored ALPR use in crime prevention and, quite frankly, this is attributable to the lack of imagination in leveraging the system. Originally, ALPR was marketed as a system to be strapped to the top of a patrol car assigned to traffic enforcement officers as a way to quadruple the amount of license plates an officer could run through a state or national criminal justice database. The arduous task of typing in a plate could now be automated and thus increase efficiency as well as arrests and citations. Although the technology was created in the 1970s, it was not widely adopted until the software and hardware got cheaper and more efficient. The late 1990s and the early 2000s saw more widespread distribution of the system and subsequent adoption into the traffic enforcement environment.

Fast forward to today, and most departments still embed ALPR systems into their traffic enforcement units. It is far rarer to see investigatory units and proactive units with ALPR systems in place. In this day and age of threat management, smarter criminals, and cutbacks, technology must be utilized to work in harmony with personnel and missions in order to achieve desired outcomes. ALPR has its place in this technology web as a crime fighter. Specifically, there are three novel uses of ALPR that, while they might challenge conventional workflows, can contribute to preventing and solving crimes.

NOVEL USE 1: DATA SET COMPARISONS

Jurisdictions can be hundreds of miles long, can have populations in the hundreds of thousands, and have only a few hundred sworn officers to serve them. Public safety in this kind of environment is a daunting task to be sure, but not an impossible one. Policing relies on playing a numbers game of sorts in order to achieve its overall goal of public safety. If a police officer wants to make a proactive narcotics case, there is a high likelihood that a known drug dealer might be a good place to start. Much like the narcotics officer looking to known drug dealers to make cases or solve crimes, beat officers rely on the same know-how to solve everyday crimes. Have a rape in a neighborhood? Officers should probably go talk to the local rapist who just got out of prison. However, in order to do this, there is a knowledge gap that needs to be bridged—who the likely re-offenders are and when they are likely to re-offend—which is where ALPR can assist.

A recent study found that released, convicted sex offenders are three times as likely to commit future sex crimes as compared to other criminals and that over 67 percent will be rearrested for any crime within nine years. Knowing the sex offenders in a given jurisdiction is the first step in filling the knowledge gap. This can be accomplished by simply flagging persons within the agency's record management system (RMS).

The second step in filling the gap involves leveraging technology. Criminals can display warning signs that they are about to offend or, in this case, re-offend. A proactive use for ALPR may be to temporarily install a system at an "at-risk" school zone. The purpose of the system would be to identify potential cars with ties to flagged individuals in the sex offender database. The system would send an alert when a known sex offender's vehicle triggered an ALPR at the school zone. It is simply an exercise in comparing ALPR data with RMS data in an automated fashion. Taking it a step further, a discrete ALPR system could be set up in an area where a serial rapist is operating—a neighborhood, stretch of downtown corridor, or on routes to remote "dumping grounds." Cross-comparisons between data sets is the first novel use of ALPR data and is probably the easiest to set up and use for most departments.

The concept of flagging individuals within a police system is one that is underutilized, but one that is of the utmost importance. ALPR relies on flags extensively to do its job. For example, to identify a plate as "expired" or "suspended," a flag must be inserted into a database system by an entity, usually a state entity. Taking this a step further, local police departments can custom flag individuals, vehicles, or addresses to prepare them for future analysis or use. An example of this could be flagging a person as "dangerous," so that if an ALPR identifies a vehicle associated with a "dangerous" individual, an officer can be alerted to this fact and act accordingly. An extension of this flagging system for use by ALPR in a crime prevention or solvability application would be to flag persons with warrants, or as parolees, probationers, sex offenders, or prolific offenders. Utilizing evidence-based policing principles to narrow down the base group for comparison, by creating flagged categories based off the future risk potential, and using the information in conjunction with ALPR data for cross-comparison, law enforcement can fill the knowledge gap.

NOVEL USE 2: TEMPORAL CROSS-TABULATION

Performing cross-comparisons on data sets is one outcome for this type of ALPR setup, but if that process fails, it still provides the data needed for another type of analysis. For instance, in the example scenario, during the course of the hypothetical investigation, no identified sex offender vehicle was found on cross-comparison. This is unfortunate, but the savvy commander in charge of the rape detail decided to leave the ALPR system in place. Over the next few days, another rape was committed in the area being analyzed, so there is a good chance that the suspect's vehicle was captured—but there is no way of knowing which vehicle belongs to the suspect. As long as the new rape is attributable to the original suspect, the suspect pool can be narrowed down substantially by the use of ALPR. The commander knows that the suspect vehicle is in the captured data, but it needs to be refined further. The data can now be temporally analyzed and cross-tabulated in order to see if the same vehicle was in the area during both crime offenses. This may result in a list of multiple suspect vehicles, but it will narrow the list for further investigation.

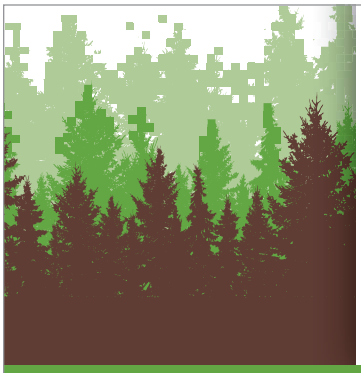
Temporal cross-tabulation is the second use for ALPR data and has multiple use case scenarios. This type of analysis is currently being used in conjunction with machine learning and artificial intelligence software for human trafficking and drug trafficking enforcement. The scenario looks like this: a vehicle is used to smuggle narcotics or humans into a location. Oftentimes, there is more than one vehicle, in a convoy of sorts, or there is a tail or lead vehicle to act as a lookout or as bait. ALPR is used to identify vehicles that travel in "packs" together at similar times and in similar locations. While one car pinging an ALPR system over and over again might not be suspicious, that same car always traveling with the same other cars in a group at different times is unusual. There is further investigation that would need to be done, but this could serve as an initial clue to key-in on certain suspects. ALPR would also be able to provide the type of registered vehicle if an investigation wanted to focus only on certain categories such as large trucks or cargo vans.

While federal entities are using fairly sophisticated, expensive software to perform these types of analysis, it can also be performed manually at a lower cost. Crime analysts are a growing resource in many police departments. A properly trained analyst could perform temporal cross-tabulations in an application such as Microsoft Excel. Data could also be imported into a link analysis software such as I2 to further explore relationships among certain plates, vehicles, or suspects through link analysis. Money helps bend the time curve and increase efficiency, but a limited budget is not an impossible hurdle to overcome and should not be viewed as a reason not to implement a robust ALPR system. The more important factor in temporal cross-tabulation analysis is having the proper data available in a user-friendly format. One of the biggest hurdles to overcome in the use of any technology to solve crimes is the perception of overall usefulness of the technology. If the technology is too difficult to use or if it is viewed as having no added benefit, it will not be utilized appropriately.

NOVEL USE 3: THREAT AND RISK MANAGEMENT

A third novel use of ALPR is its potential for threat and risk management. Behavioral threat analysis, threat management, all-hazards risk assessments, and leakage identification are all methods to stop targeted violence from happening. Smaller geographical communities, such as college campuses or work campuses, are especially poised to adopt ALPR technology for this use as it is ideal in that type of environment. Identifying the increased risk for a violent outcome is only one part of the threat continuum. Stopping the threat or identifying further changes in the risk assessment are equally as important. Placing ALPR within an area identified for a potential violent act is a proactive approach to mitigate risk.

Workplace violence is an ever-growing threat, and researchers agree that it will take a combination of entities such as fusion centers, employers, and local jurisdictions to overcome the knowledge gaps and reduce risk. Different entities have different pieces of the puzzle, and the assimilation of the data is paramount to see the big picture. ALPR can provide a piece of situational awareness to the puzzle. Once an individual is identified as presenting an increased risk for a violent act, ALPR can be deployed and targeted for that individual. If the individual's car and plate are known, then ALPR can alert police if the individual's vehicle shows up in a specific area. This is ideal for parking garages, buildings with limited parking, and along roads with limited egress to certain geographical locations. A domestic offender can be identified as he or she drives onto a property rather than when he or she walks through the door. A disgruntled employee can be identified as he or she parks in a garage rather than when he or she shows up at the boss's office. Minutes and seconds of forewarning are precious in averting mass shootings and workplace violence, and ALPR can provide those. It is simply a matter of flagging a target and creating an appropriate alert. ALPR is getting so sophisticated that it can even send an alert on a certain make and model of car—if the offender takes a tag off or switches to a different plate, ALPR alerts could still be activated for the make and model of a target vehicle.



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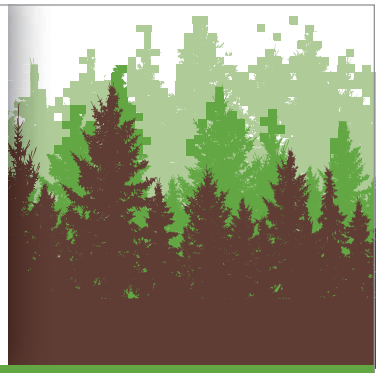

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Taking this a step further, law enforcement could combine this use with geographic fences. Instead of getting an alert when a subject comes into a garage, a geofence can be set up so that the ALPR sends an alert when a subject enters or leaves an area. Theoretically, this gives police more time to react through early warning systems and planning. Geofences not only are applicable to threat management, but can be leveraged in other scenarios as well. For instance, an individual with suicidal ideations could be placed within a geofence and alerts could be sent if the individual leaves a certain area or enters another. Recalling the earlier example of sex offenders, a geofence could be placed around school zones—and alerts could be created that will be sent when any sex offender enters the fenced zone. Suddenly, the goal of covering more area with fewer officers seems achievable and plausible through the strategic implementation of a robust ALPR system.

CONCLUSION

While many of these scenarios were presented as hypothetical within this paper, they have in fact been implemented to different degrees at departments around the United States. One challenge to implementing these applications is the willingness of the ALPR vendor to marry the plate data with in-house department data or, at the very least, give access to the underlying data in a useable format. There is sure to be an expense involved in the initial setup, but there should be no long-term costs once established. In order to run cross-comparisons and cross-tabulations automatically, an agency would need appropriate software in place. There are many different ways to implement these uses, but automation is the best way to go in order to get near real-time benefits, especially in regard to threat management cases. Geofences involve the use of geographic information systems (GIS) in order to build spatially aware buffers where ALPR alerts can ping within or outside identified boundaries. There are a few well-known GIS software vendors, and all should be able to handle the fairly mundane task of geofence building.

Indeed, the most challenging aspect of novel ALPR use is the leadership's creativity and openness to go outside the normal boundaries of a technology's use. Research has shown that leadership within any local police department develops in a bubble, there is no formalized method of developing leaders, and those who are promoted sometimes simply mimic the thought process of those leaders above them. While there are positive elements of internal leadership development, one potential con is a stifling of creativity with regard to workflows and procedure. The mind-set can be that if a certain technology has always been used for a particular procedure, then it should continue to be used for that specific procedure. But, what if the technology could do more? This is the question that needs to be posed with regard to ALPR. How can ALPR be used to further fight crime and increase the solvability of committed crimes?

In conclusion, ALPR is a valuable resource that continues to see more widespread use among departments every day. Expanding past the normal uses of ALPR can lead to some novel crime-fighting methods and crime solvability factors. Through the marriage of in-house data, flags, and software systems with ALPR data, new trends and insight can be revealed. Threat management cases can be positively impacted through time gains in early warning systems, and officer efficiency can increase overall. As the technology gets better, more future novel uses may be realized, and creativity within police leadership is needed to realize these opportunities.

IACP RESOURCES

- ALPR FAQs
- ALPR Policy & Privacy

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- "Technology Talk: Improving Crime Investigations with License Plate Recognition Technology" (article)

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LESSONS LEARNED ON IMPLEMENTING **BIG DATA** MACHINE LEARNING

The Case of Predictive Policing at the Vancouver Police Department

BY
Ryan Prox, OOM, S/Constable in Charge, Crime Analytics Advisory Development Unit (CAADU), Vancouver Police Department, British Columbia

ARTIFICIAL INTELLIGENCE (AI) AND MACHINE LEARNING ARE AT THE FOREFRONT OF A TECHNOLOGICAL REVOLUTION THAT AFFECTS VIRTUALLY EVERY FACET OF SOCIETY. From the voice of Siri or Alexa to autonomous self-driving cars, machine learning is permeating into people's daily lives and professions, including that of policing. The emergence of predictive policing as a crime prevention and crime interdiction strategy is illustrative of this trend. Although many police agencies around the world have implemented or plan to adopt predictive policing, this trend has not been without controversy, with critics and civil rights groups raising concerns over the use of big data, along with the challenges surrounding the analytics. These concerns include biases in the underlying data, the perceived "black box" functioning of the model, and the way the technology is applied within an organization. Due to these conflicting perspectives, predictive policing is a source of both optimism and concern for law enforcement and the public at large.

It is in this context that Vancouver Police Department (VPD) has implemented an unsupervised machine learning algorithm. The lessons learned in the VPD's journey to apply this new strategy in an ethical and transparent way can help other law enforcement agencies who also want to explore the opportunities offered by advancing technology.

IN THE BEGINNING

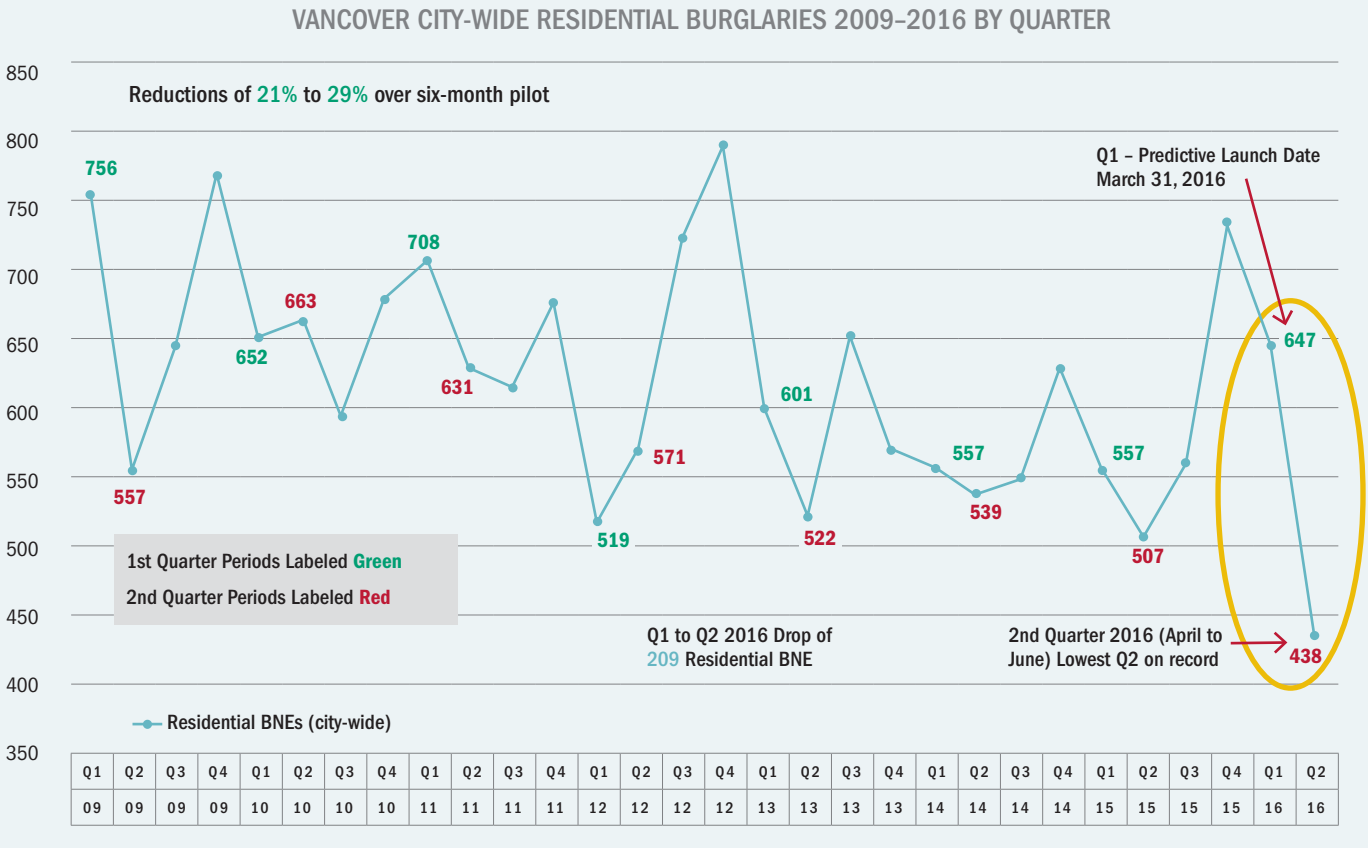
VPD's predictive policing project started with geospatial engineers and statisticians from academia who worked in partnership with the VPD to develop a machine learning system that could identify property crime patterns. The end result was a forecasting system that could predict a crime location within a 100-meter (300-foot) square at two-hour intervals. The algorithm was designed to continually learn by reviewing data and outcomes and improving its performance through regularly scheduled retraining cycles. The system has proven to be an effective tool in tackling property crime. During the six-month pilot project in which the system was used to direct enforcement activities, burglaries were reduced by more than 20 percent month over month. The pilot started at the end of the first quarter of 2016, which had recorded the highest number of residential burglaries in 20 years. By the second quarter, VPD witnessed the most significant drop in property crime that was ever recorded in its jurisdiction, resulting in the lowest number of residential burglaries in the past 25 years. Due to the significant results achieved, dedicated teams using this approach now form a part of an overall crime reduction strategy.

The VPD crime forecasting targets only locations for resource deployments and never an

individual, which is a key distinction from people-based predictions. The solution benefits from decades of applying location intelligence to address crime in Vancouver. The consistent use of geospatial information has helped to create the necessary infrastructure and supporting data that underpin the system, resulting in accurate business intelligence and crime analytics that provide a better understanding of the underlying causes of crime issues. Tied to the growth in the use of big data has been a parallel growth in geographic information systems (GIS) being used by law enforcement and the resulting features and capacities that this brings to the forefront. It is now commonplace for police services to have a robust GIS infrastructure already in place (e.g., AutoCAD, GeoMedia). Capitalizing on these advancements and internal capacity, the VPD was well positioned to move forward with a transition from traditional hotspot policing to a proactive stance that is intelligence led and informed by evidence-based decision-making.

When exploring the viability of implementing predictive policing within a law enforcement agency, the discussion must first turn to whether the necessary infrastructure is in place and whether the agency has access to the "right data" for a forecasting model to function properly. The term "right data" includes not only data sources that contain the relevant information, but also a sufficient volume of data that has undergone the necessary rigor to ensure consistency in coding, adherence to standardized policies for collection, and best practices in quality control and data integrity.

FIGURE 1: THE NUMBER OF RESIDENTIAL BREAK AND ENTERS THAT DROPPED DRAMATICALLY AFTER THE LAUNCH OF PREDICTIVE POLICING.



The application of machine learning, predictive technology is dependent on two key requirements. First, the police service must have the commensurate technology in place to support the implementation of advanced statistical and data mining tools that can process millions of calculations across the terabytes of data required for a machine learning process to function. Second, if the agency is in possession of the necessary "big data" source, the data must be in a form and quality that facilitates the training of a predictive model. This requires the data to be free of errors over the entire range they have been collected, and, equally important, the initial coding and collection of the data must have been done in a consistent manner, with no variations in the standards and criteria that define each variable. The adage "garbage in, garbage out" has even greater significance when it comes to the use of machine learning technology and developing predictive outputs.

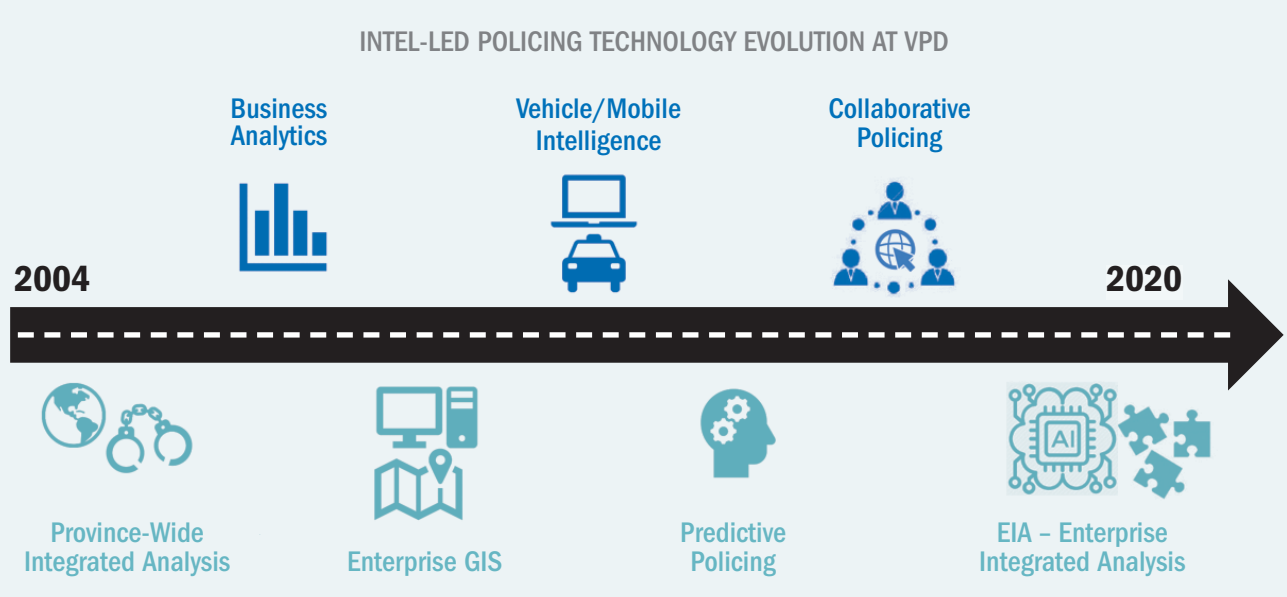
When considering the implementation of some form of predictive policing, an organization must first reflect on whether the output from the technology will realistically improve expected outcomes and decision-making or whether revisions and enhancements to the current process might be expected to have similar, if not better, results. If the decision is to proceed with a predictive policing initiative, then sufficient time and resources must be allocated to develop and implement data quality standards, quality control processes, and training for those responsible for generating the data. In law enforcement, the root cause of most data quality issues resides with the officer inputting the variables, in the form of police incident reports nested in a records management system (RMS).

In tackling some of these challenges, the VPD has been continually developing technology and infrastructure, starting in early 2000 with the introduction of a province-wide integrated analytic system. From this initial development, the department then progressed through business analytics; enterprise GIS; predictive policing; and, most recently, the implementation of an enterprise integrated analytic platform that can mine unstructured data and identify patterns buried deep within police systems. At every step in the technological evolution, the VPD has also kept pace with advancements in data quality checks, records clearance review processes, and the application of strict coding and supervisory oversight for every police incident file. This parallel stream helped to ensure both the technology and the underlying records used by the systems met stringent quality control standards. The timeline in Figure 2 illustrates this progression.

MARGINALIZED COMMUNITIES AND CRIME FORECASTING

Traditional adoption of new technology, such as radio systems, rarely require a retroactive review of business processes to ensure past practices do not inadvertently impact a newly implemented machine learning system. However, predictive policing requires carefully calibrated

FIGURE 2: A TIMELINE OF THE TECHNOLOGICAL EVOLUTION AT THE VPD



measurements and large volumes of unbiased data that have been deduped and error corrected in order to support machine learning. Data quality can be the enemy of predictive policing, where unforeseen systemic issues related to quality control, standardized coding, and inherent bias can affect the success of the implementation. These issues are difficult to control for and often derail organizations looking to increase productivity with machine learning processes. For example, in those circumstances where the data contain location bias and the information is used to generate forecasts, the subsequent deployment of police resources will further reinforce and accentuate this issue. In this situation, the common outcome is for the predictive system to increase the police presence in those areas where the police were originally active and engaged in crime control measures. The data collected continue to corroborate the overrepresentation of resources and the machine learning reinforces this bias. Ultimately, predictive programs are only as good as the data they are trained on.

For the VPD, great care was taken to ensure adequate measures were put in place to help safeguard and ensure bias-free data as much as possible. At the onset, the VPD sought to address potential issues, such as an unintended outcome of targeting of community members, whereby predictive technology could result in over-policing of marginalized or ethnically diverse neighborhoods. Closely tied to this preventative strategy is the overall ethical application of the technology and ensuring both respect for privacy rights and transparency in the deployment of police resources.

The VPD took great lengths to consider civil rights and the protection of privacy by not collecting information on individuals, only locations. In this regard, the VPD has also been cognizant of working with marginalized communities. For instance, Vancouver's Downtown Eastside (DTES) includes some of the most marginalized and vulnerable populations in Canada, with people facing challenges that include poverty, mental health, and substance abuse. To better address the needs of this very diverse community, a community policing approach that focuses on harm reduction and one-on-one engagement is being used instead of predictive policing. The police work with mental health practitioners who are embedded within specialty police teams, working jointly

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Officer using GIS technology to plan resource allocation.

with community nurses, addiction counselors, Coastal Health Authority, and community support groups and nonprofit services. These units provide dedicated resources geared toward providing a better service delivery to that client group in the DTES neighborhood.

Given the challenges that the people living in the DTES are experiencing, a strictly enforcement and deterrent approach does not mesh or complement the other support strategies that are in place within that community. As such, it was decided that dedicated beat team resources and community policing programs were best suited for engaging with the members of the community in the DTES and the use of predictive policing may in fact be counterproductive for this client group.

In contrast, predictive policing, as it is applied by VPD, is premised on deterrence and proactive interdiction strategies, whereby police officers and community safety officers deploy to areas that have been identified as having a greater probability of experiencing a property crime incident—specifically, residential burglaries. Police resources, guided by the system, capitalize on the deterrent effect a of high-visibility police presence.

AUDITING OPAQUE PROCESSES WITH AN EYE ON ETHICS

Like many machine learning algorithms, the one utilized at the VPD, is unsupervised, rewriting itself every two to four weeks; thus, the specifics of what exactly the algorithm calculated or weighed at each specific time interval is often unknown. These limitations have contributed to the criticism that many crime forecasting systems represent a "black box," whereby it is impossible to determine how an output was arrived at.

The core algorithm adjusts to nuances and patterns that are emerging, then uses them to calculate daily forecasts. The details of what is being factored into the calculations and the weight of each of these factors are subject to change from moment to moment. Because of this limitation in the ability to actively monitor how the algorithm is weighting specific factors, system outputs and subsequent resource outcomes are regularly examined. Specifically, the potential issue of police overrepresentation in an area is monitored. In lieu of the ability to trace the algorithmic process used to arrive at a specific forecast, the VPD instead relies on regularly scheduled audits of model outputs, policing outcomes, and performance benchmarking to determine whether the system is behaving as expected and to provide an early warning of any potential issues that could possibly arise. For the units sent to forecasted locations outside the marginalized areas, exact locations and durations are recorded. In addition, a detailed template within the RMS is filled out by the officers each time they are deployed to a forecasted location. The electronic RMS template and location tracking document the officers' actions, enabling an evaluation that can be conducted on the frequency of time and location factors on a regular basis.

DATA TRANSPARENCY AND THE NEXT STEPS

As well as learning its own lessons along the way, VPD also benefited and adapted its approach based on the lessons learned from other police services that have implemented crime forecasting systems. Many departments have faced legal challenges because they run afoul of civil rights and civil liberties principles—a significant risk with predictive policing. In several studies, data from patrols, arrests, convictions and other data tied to the criminal justice system have been shown to have an inherent bias. For example, focusing on potential offenders based on their associations within the community, connections to relatives with a criminal history, and officer perceptions can result in unjustifiably criminalizing people by subjecting them to intense police scrutiny. This could also contribute to a cyclical pattern created

by predictive systems, which can further perpetuate the inherent bias that created the initial police scrutiny.

As previously noted, the VPD avoids some of these pitfalls by exclusively focusing on locations and not persons. Taken a step further, VPD intentionally excludes the use of police-generated data, and instead processed only citizen-generated property crime incidents. While community-generated data can still contain levels of bias and prejudices, removing police-generated data from the system inputs helps to control any underlying organizational issues, should they exist. While the VPD has a long history of positive community engagement and proactive participation with marginalized members of the community, the added step of removing any perceptions of police bias helps to strengthen public trust in the use of the technology. As the data source is derived from the community, there is a better chance for the outcomes generated to be perceived as less biased and police-centric than if they were generated only from police data.

The VPD has received many inquiries regarding the application of big data and crime forecasting in its operations. As a result, VPD has actively engaged with civil liberties associations, privacy advocates, journalists, and academics to achieve greater transparency. One recent example is the establishment of an open data catalog, where the public can visit the VPD website to download and independently analyze police data spanning the last 16 years. These open data include the time period when crime forecasting was implemented, and it is available to anyone on the Internet.

Given the ethical and civil rights implications in the use of this technology, there is in fact considerable risk and liability exposure for police services. It is hoped that other police agencies interested in machine learning and crime predictions will use the experiences and practices that have been learned through the VPD implementation. However, this work is ongoing and constantly evolving. There is still much to be done to improve on communication, community engagement, and transparency of the systems being used. As such, the development of a police industry code of conduct for this type of project that has undergone an independent and objective review process would help to ensure public confidence and protect against any technical engagements that might bring controversy to an organization. While the Canadian-developed Montreal Declaration for the Responsible Development of Artificial Intelligence imparts a broad ethical framework for industry and public bodies, including guiding principles and human-centric values in the use of technology, it does not provide specifics as to how to achieve this in a real and pragmatic way. For police services that are engaged in the use of machine learning algorithms, a detailed checklist of mandatory practices is needed, ranging from independent ethical review mechanisms to integrity checks for data bias, including a minimum standard for reviewing algorithms for inherent programming bias. Tied to this should also be specifics as to what level of transparency is required concerning the functioning of the algorithms and the parameters for verifying and testing AI prior to usage. These are very real issues within the policing community, and there are currently no standard practices that speak to these necessities. The VPD is currently working with law enforcement partners, government representatives, and industry working groups to help fill this gap.

In summary, many of the issues related to civil rights violations and the over policing of marginalized and ethnic minority communities were identified early on in the project and steps were taken to mitigate or avoid these controversial issues. Focusing exclusively on property crime, excluding police-generated reports from the data importation process, and implementing specific solutions to guard against crime forecast hotspots in marginalized segments of Vancouver have all helped to ensure a more ethical and less biased forecasting system.

IACP RESOURCES

- "Connecting the Dots: Data Mining and Predictive Analytics in Law Enforcement and Intelligence Analysis" (article)
- "The Northern Virginia Military Shooting Series: Operational Validation of Geospatial Predictive Analytics" (article)
- "Better Days Ahead: Artificial Intelligence, Machine Learning, and the Quest for the Holy Grail of Analytics" (article)

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THE LAST TELECOMMUNICATOR HAS BEEN BORN

BY
Antonio Sajor Jr., Captain, Stockton Police Department, California

FUTURISTS HAVE BEGUN TO OFFER THE PROSPECT THAT THE LAST PEOPLE TO BE EMPLOYED IN CERTAIN PROFESSIONS HAVE ALREADY BEEN BORN. Law enforcement agencies attempting to address skyrocketing employee costs, high attrition rates, and the desire of the community to be included in the ways policing is done create a petri dish for technology to bloom. Add in an accelerator—the need to develop new law enforcement technology with a national or global standard—and the field may be on the cusp of radical change. One place almost all of these factors can be realized is in the law enforcement telecommunications center.

Much like a human grows from an infant to a child, to a teen, and then to an adult, so must the technology that will first help and then replace the last human telecommunicator. Police executives must imagine the future so that it can be built. With technology advancing exponentially, perhaps the last police telecommunicator has already been born.

CHALLENGES IN THE MODERN TELECOMMUNICATIONS CENTER

One function in a law enforcement agency that is commonly understaffed is the telecommunications call center. Call centers are a critical initial point of contact for the vast majority of the calls for service to which a law enforcement agency responds. Each call must be handled individually, and the caller must be given the needed attention and respect to set the tone for later contact by the field units. To address calls properly, there needs to be staff to help, and staff must be provided with the time to listen to callers and not hastily move on to the next call.

The constant bombardment of calls for service leads to high levels of stress in telecommunicators, which, if not managed properly, leads to burnout. The emotional exhaustion experienced in burnout can lead to increased stress and irritation, which can be transferred to the person calling for help.

While telecommunication call centers have increased their capacity and efficiency through the use of computer-aided dispatch (CAD) systems and automated message lines, many are the last to see increases in staff. For example, in Frederick County, Maryland, telecommunication staffing had not increased at the same rate as the call volume had. Inadequate staffing levels forced employees to work overtime to cover shifts and increased employees' stress. The increase in stress and the drain on employee morale and efficiency resulted in a push for staffing to increase; yet, only half as many as needed were hired due to a shortfall in funding.

Funding for staffing will continue to be problematic as economists predict a possible financial crisis and recession are looming. As a result, police agencies will likely need to cut costs and eliminate services provided. Prior fiscal emergencies have shown that attrition in employees occurs in the forms of layoffs, early retirements, or employees leaving the industry. Positions in dispatch centers are not immune to this.

Losing knowledgeable employees and staffing centers with employees who have low morale and enthusiasm can affect the quality of service provided over the phone. The California Partnership for Safe Communities (CPSC) offers that the development of procedurally just protocols in functions,

> *that involve interacting with numerous residents would leverage the opportunity these functions have to shape the community's opinion of the police. Changes would include modifying the protocol that personnel in those functions follow to reflect greater respect listening, fair decision-making and trust or goodwill toward residents.*

Although the focus of CPSC's work is on the ways the police interact with their communities in the field, many members of the public have their first interaction with dispatchers prior to an officer arriving. These procedurally just protocols are now being taught to humans, but technology has advanced to a point where they can also be taught to machines.

Photos courtesy of Tracy H. Shelton, Fairfax County, VA

Using interactive voice response technologies, those who contact the police can have their problems addressed in a neutral and responsive manner by technology platforms designed for that purpose. Eliminating the human from the process may sound odd, but it reduces unwanted "variance" in competence while also addressing some of the core concerns of the President's Task Force on 21st Century Policing.

INTERACTIVE VOICE RESPONSE AS A SOLUTION TO A CHALLENGE AND MANDATE

Technology may be a way to provide the needed interaction with callers that mitigates the challenge of effective community policing in the future. In its report, the President's Task Force on 21st Century Policing called on the National Institute of Justice to set standards for the research and development of new technology. Local development of interactive voice response (IVR) technology for which results are collected and collaborated with governmental, community-based, and professional associations is key to fulfilling that recommendation.

Research into how technology facilitates the automation of dispatch functions in ways consistent with the President's Task Force's recommendation needs to occur. According to one software provider, the automation of the question selection process during initial call-taking can lead to the quicker collection of accurate call information with a less anxious experience for the employee. The article also notes that such dispatch assistance technology can diminish the stress on telecommunicators by providing real-time guidance on what questions to ask callers during emergencies. A natural extension of automated question selection is the use of IVR systems that can determine what the caller truly needs and ask questions directed to that need to lessen caller frustration and increase trust in the police.

In 1999, futurist Ray Kurzweil forecast that, by 2019, computers would be "largely invisible" and "embedded everywhere." Kurzweil also claimed that machines would begin passing the "Turing Test," which is used to determine whether machines can think and whether their "thinking" is indistinguishable from human intelligence, a point that has recently been crossed. Many of Kurzweil's predictions have not come to fruition, but the technological singularity is still inching toward becoming a reality. An emerging solution that could create the technological infrastructure to automate dispatch could be IVR. Current IVR technology uses telephone touch-tone and voice input to give the caller access to information through a series of menus and options. Many law enforcement agencies already deploy this technology in their non-emergency calls for service.

A quick Internet search will provide numerous listings of vendors selling IVR technologies; all still provide the basic phone tree model that pulls information from a database determined by a prompt or response from the caller. Although implementing this could be the first step to virtualize and automate a law enforcement call center, work on the technology is needed to identify sounds and words in the background, as well as to vary its questions if faced with non-responses or non-answers to questions. For example, voice response systems are used in daily life by persons who use Google Assistant, Alexa, or Siri or call their bank or health care provider for assistance. These applications are examples of how IVR technology currently supports humans, but only when provided with specific directions. IVR technology is evolving, though, and through that evolution, telecommunication centers may soon be able to eliminate human error and poor performance in call handling. For example, in August 2019, a 911 dispatcher who had recently submitted her letter of resignation spoke to a stranded caller in a rude tone and made unprofessional remarks. The caller had stranded her vehicle in a flood and told the dispatcher she was afraid to die. The caller was found an hour later, drowned, after being repeatedly mocked by the dispatcher for being scared and for getting stuck in the flood. In 2018, a Houston, Texas, dispatcher was sentenced to jail time

and probation for hanging up on thousands of callers, including victims of armed robberies, police officers, and community members she did not feel like talking to. The dispatcher was quoted as saying in a call recording, "Ain't nobody got time for this." If IVR was programmed properly, these tragedies would not occur. An IVR application could keep a neutral tone with a caller, not get agitated, and stay on the call for as long as it took for officers to find the caller, something current telecommunications staffing cannot always accommodate.

Purposeful actions are not the only items impacting service. In Nashville, Tennessee, a resident's burglary alarm call was mishandled by the telecommunicator who allowed the call to slip, and the response came five hours later. The resident assumed the police had responded and had left after not finding a problem. In his comments to the local news, the resident wondered what would have happened if he had been shot and left to bleed. Implementing artificially intelligent IVR into police dispatch may provide a layer of protection against purposeful actions and mistakes made by human telecommunicators. It can provide a ready response to any initial call for service into police telecommunication centers.

Other amazing artificial intelligence technologies are being refined today that soon could eliminate many jobs, resulting in performance that will probably be faster and more accurate, and improve interaction with the public. An example of the dematerialization and virtualization of human jobs is happening in Shanghai, China. The Jiujiang Road Branch of the China Construction Bank almost entirely services customers through robots, machines, and facial recognition applications with a virtual reality room and video link to allow for off-site human interaction when needed. In Dubai, United Arab Emirates, robot officers are being deployed in the field to assist people in reporting crimes and providing information. Dubai Police expect that a quarter of their police staffing in Dubai will be machine-based within 11 years. These examples show how governments, business executives, and customers are willing to accept the virtualization of jobs historically staffed by humans and to use the services provided. The examples also show how both the private and public sectors in some countries are making strides to multiply their customer service capacity by using interactive technologies.

THE FUTURE IS BEING ENVISIONED FOR US

Fortunately for those with limited imagination, the future is being envisioned for us. Examples of futuristic and intuitively interactive voice response systems can be found in popular media and private software developers. In Dan Brown's novel *Origin*, a wealthy scientist creates an artificially intelligent application that converses in real-time in different languages with hundreds of people at an event. In the popular *Avengers* movie series, "Jarvis" is an IVR system that can think and adjust to stimulus. In the film, Jarvis provides calculations, analysis, and responses to conversation. Jarvis ultimately sacrifices itself to prevent harm by another self-aware IVR application. A nonfiction example of IVR technology is the Google Duplex project. Google Duplex is an IVR application that is designed to complete tasks over the phone through a conversation without its main user, the device owner, needing to monitor the call.

There are some concerns in IVR application for law enforcement telecommunications. The author gathered separate panels consisting of technology executives, public safety managers, and community members in March and July 2019 to discuss trends in technology, police telecommunications centers, the community, and the use of IVR in police dispatch. The panelists offered several observations on usership:

- It was believed that certain sections of the community would not want to call police departments and speak to a computer.
- The group conceded there was a common belief that older generations either fear or dislike technology and that would directly impact the implementation and use of IVR technology.
- In contrast, the future user base would likely come from millennials and Generation Z communities, who have always known a world with interactive technology and support and who would likely support the use of IVR by the police.
- In an increasingly diverse country, non-English speaking communities might be adversely impacted if IVR technology did not immediately recognize multi-language needs.

Of course, the panels also provided a series of possible limitations and challenges in acceptance and perception of an IVR system.

- IVR system failure via virus infection, non-operation, or erroneous translation
- Unknown implementation and recurring maintenance costs
- Capability of an IVR application do portray realistic empathy as a human telecommunicator could without sounding robotic or condescending
- The current lack of available machine learning technology needed for determining languages and dialects needing to be translated in real time

These challenges should not be ignored; rather, they need to be embraced by those groups collaborating to create and implement IVR technology so as to drive improvement of the technology and conceive methods for overcoming these potential obstacles. Law enforcement telecommunications centers are the hub for handling all types of chaos in the community, so all segments of the community must be involved collaboratively in the initial design and implementation. Although law enforcement and community members would be the main users of the application, there is a definite need for persons in the technology industry, communications and linguistics community, and academics to be involved in the design, user education, and implementation of IVR technology in the law enforcement setting. Collaboration at the local and national levels for a technological advancement such as IVR is strongly needed.

CONCLUSION

Law enforcement executives and managers need to envision a future where calls into call centers are almost immediately triaged, prioritized, and given the needed level of services with enhanced efficiency. This will undoubtedly be more efficient with the implementation of IVR telecommunication centers that speak in real-time in various languages and dialects to numerous callers simultaneously. Executives must also remain vigilant and provide the time needed for projects to unfold. If the IVR for law enforcement is rushed or poorly implemented, there will be a risk of losing the industry support and the user base for which the service is intended.

Using IVR technology to augment and eventually supplant the human telecommunicator is a future reality that is foreseeable today. As with any technology, law enforcement leaders must practice caution to ensure it's fiscally sustainable, it interfaces smoothly with the community and staff alike, and it's designed and implemented in a manner that allows the community to have a voice in the process. Implementing IVR through collaborative design of an engaging, meaningful contact with the caller that ends in a feeling of the appropriate services being rendered on non-emergency calls could provide the avenue to develop and use IVR in emergency calls in the future.

IACP RESOURCES

- "The Cyber Beat Partner: Harnessing the Power of AI in Law Enforcement" (article)
- "Technology Talk: Public Safety Virtual Assistants for FirstNet" (article)
- "Artificial Intelligence and Community-Police Relations" (article)

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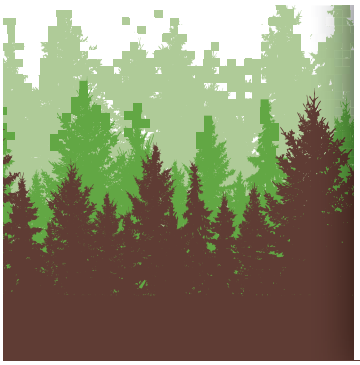

IACP TECHNOLOGY CONFERENCE

LEIT 2020

May 12-14
PORTLAND, OR
theIACP.org

OVERVIEW

The 2020 IACP Technology Conference will be held May 12–14, at the Oregon Convention Center in downtown Portland, Oregon. The IACP Technology Conference is a professional law enforcement event dedicated to bringing together leading practitioners to explore the latest technology issues confronting law enforcement and to stay ahead of sophisticated cyber-enabled crimes. In addition to the nearly 50 educational workshops offered at the conference, attendees will have numerous networking opportunities and access to the exhibit hall featuring more than 80 industry-leading exhibitors.

Sessions and activities are geared to meet the needs of a broad range of law enforcement stakeholders.

- Law enforcement executives
- IT managers
- Crime analysts
- Investigators
- Patrol officers
- State and local information and technology officers
- Federal agency representatives
- Tech industry service providers

WORKSHOPS

The Technology Conference will feature more than 50 educational workshops, spanning three full days. Workshops will address critical technology challenges facing departments today, provide innovative solutions, and present cutting-edge technology for the field. Attendees will have the opportunity to learn from other departments, government agencies, and the private sector regarding emerging and innovative technology applications related to the following relevant issues:

- Artificial intelligence
- CAD/RMS solutions
- Cybersecurity and ransomware
- Digital forensics
- Drones/UAS
- Facial recognition
- Mobile policing
- Officer wellness
- Video evidence

SCHEDULE OF EVENTS

Opening Ceremony

IACP leadership and the event's keynote speaker will address emerging technology as it relates to law enforcement and the impact that technology has had on policing globally.

LEIT Section Business Meeting

The IACP Law Enforcement Information & Technology (LEIT) Section will convene to discuss the latest activities and networking opportunities impacting the membership on information management, interoperability, and technology standards.

Exhibit Hall

Beginning Tuesday afternoon, all registered attendees will have access to the IACP Tech Exhibit Hall. The expansive exhibit space will feature more than 80 industry-leading exhibitors displaying and demonstrating the cutting-edge technology supporting law enforcement's mission.

Cybersecurity & Ransomware Plenary Session

Wednesday's plenary session will feature agencies that have been victims of ransomware. Join the speakers as they share lessons learned from their experiences and discuss the cybersecurity solutions to mitigate impacts from and defend against ransomware.

Casino Night – Hosted by Panasonic

Join us on Wednesday evening for Casino Night, hosted by our Industry Leader Sponsor, Panasonic. Enjoy food, drinks, and games while networking with fellow conference attendees.

Using Policing Technologies Ethically Plenary Session

The plenary session on Thursday will focus on the ethical use of technology in policing. Panel members will draw from a number of case studies as they discuss best practices to ensure the ethical and transparent use of technology by law enforcement.

Officers' Day – Hosted by Global Traffic Technologies

Local Portland-area law enforcement personnel can visit the exhibit hall on the final day of the conference for free. See the latest technology, engage with industry leading exhibitors, and learn from practitioners in the Tech Talk Theater.

KEY DATES

MOBILE APP LAUNCH:
MARCH 31, 2020

GENERAL REGISTRATION ENDS:
APRIL 28, 2020
(Attendees can register online until the conference start date; however, prices will change after April 28.)

HOTEL ROOM BLOCK CLOSES:
APRIL 17, 2020

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2. Applications must be received at IACP headquarters by 5 p.m. ET **June 30, 2020**.
3. Renewing members do not qualify for this drive.
4. The 20% off a new membership is not transferable. The 20% off the IACP 2020 Annual Conference registration token may be used by anyone.
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M2M20

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Information on membership categories, benefits, and eligibility can be found on the IACP web site **www.theiacp.org/membership**

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❑ Academic ~~$190~~ $152

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(sworn non-command level)

❑ Student—Leader of Tomorrow University name: ~~$30~~ $24

Optional Section Memberships:

❑ Capitol Police Section $30

❑ Defense Chiefs of Police Section $15

❑ Drug Recognition Expert (DRE) $25

❑ Indian Country Law Enforcement $25

❑ Intl Managers Police Academy & College Training $25

❑ Law Enforcement Information Technology (LEIT) $25

❑ Legal Officers $35

❑ Midsized Agencies Division $50

❑ Police Foundations Section $20

❑ Police Physicians $35

❑ Police Psychological Services—initial processing fee $50

❑ Public Information Officers $15

❑ Public Transit Police No Charge

❑ Railroad Police No Charge

❑ Retired Chiefs of Police No Charge

❑ Smaller Department Section $20

❑ S & P Police Alumni Section No Charge

❑ S & P Police Academy Directors No Charge

❑ S & P Police Planning Officers No Charge

❑ University/College Police—Initial Member $50

❑ University/College Police—Additional members $15

Cybersecurity Research

BY
James L. Emerson, Vice President, National White Collar Crime Center, Chairman, Computer Crime and Digital Evidence Committee, IACP, and Joshua Smallridge, PhD, Associate Professor, Fairmont State University, West Virginia

IN 2013, THE IACP PARTNERED WITH THE CANADIAN ASSOCIATION OF CHIEFS OF POLICE (CACP) TO SURVEY NORTH AMERICAN LAW ENFORCEMENT AGENCY (LEA) EXECUTIVES REGARDING THEIR AWARENESS OF CYBER THREATS, THE RISK FACED BY THEIR AGENCIES, AND THE CYBERSECURITY HYGIENE NECESSARY VERSUS WHAT THEY EMPLOYED.

After soliciting the members of both associations to participate, the survey closed with 456 LEA responses, which were demographically aligned roughly with that of organizational membership. The 2013 research was facilitated by the IACP and CACP staff, the IACP Computer Crime and Digital Evidence Committee, and the Digital Boundary Group.

In 2019, the IACP and the CACP agreed to update the research conducted in 2013 by reissuing the core questions from the original survey within an expanded and updated one to include new cybersecurity threat, risk, and hygiene questions demanding attention. After again soliciting the membership of both associations, the survey closed with 232 LEA responses, which were again demographically aligned roughly with organizational membership. The 2019 research was facilitated by the IACP and CACP staff, the IACP Computer Crime and Digital Evidence Committee, and the Public Safety Information Sharing and Analysis Organization.

In the analysis of the 2013 survey data, contextual factors such as control of IT services by LEAs came into question as overall responses led to the discussion of causative issues like control. Even when executives clearly understood risk and were aware of the threat, in many cases, basic cybersecurity hygiene was not commensurate with that knowledge. Agency IT services provisioning was questioned in an attempt to understand what responsibility agencies had for operation, risk management, and security. This query was replicated in the 2019 survey.

Figure 1 depicts a comparative look at provisioning captured in both surveys. It appears that local agency provision decreased in proportion with an increase in centralized IT government provision. Different categories of provisioning remained relatively stable across the five-year period with external contractor provisioning remaining constant. These changes appear to indicate a trend of lessening the direct control by LEAs over provision of IT services in 2019.

As noted, executive awareness of threat and risk was measured in 2013 and again in 2019. Figure 2 depicts the five-year change in the awareness and prevalence of cyberattacks. The willingness to confidently say that no attack had occurred decreased while the percentage of agencies willing to confidently say that an attack had occurred increased substantially, and the agencies answering that attacks were unknown decreased.

An area of the survey, which was new in the 2019 research as it was thought to be an important emergent threat, was cryptographic attacks. Thus, the survey included queries of participants regarding ransomware and related forms of attack. Possibly most revealing was that 21 percent of agencies that experienced a cryptographic attack paid a financial demand or ransom. This infers the desperate nature of ransomware attacks when imposed on LEAs; the gaps in basic cybersecurity hygiene necessary to mitigate this threat; but, more important, the inability to quickly recover without responding to criminal demands.

Another new query in the 2019 survey sought to determine awareness of multiple or repeated attacks, as this would infer some basis for the presence of continuous monitoring as a facet of cybersecurity hygiene and risk management. Figure 3 depicts compromised agencies that experienced multiple attacks over a five-year period. When considering other factors, this chart is likely understated, but it still paints a picture of repetitive attacks that were detected.

Given analysis of all survey data, it appears that over the five years between surveys, executives' perception of LEA cybersecurity risk has increased to 96 percent of respondents, with the number of respondents perceiving no risk dropping to zero.

Perceptions among respondents regarding attack impact on agencies remain the same as noted in 2013. That said, discussions in committee during the 2019 IACP Conference in Chicago included a range of concerns regarding the digital integrity of data during and subsequent to any attack; the most concerning attacks appear to be cryptographic attacks where a victim agency loses access to their systems and data for an extended period.

FIGURE 1: PROVISION OF IT SERVICES

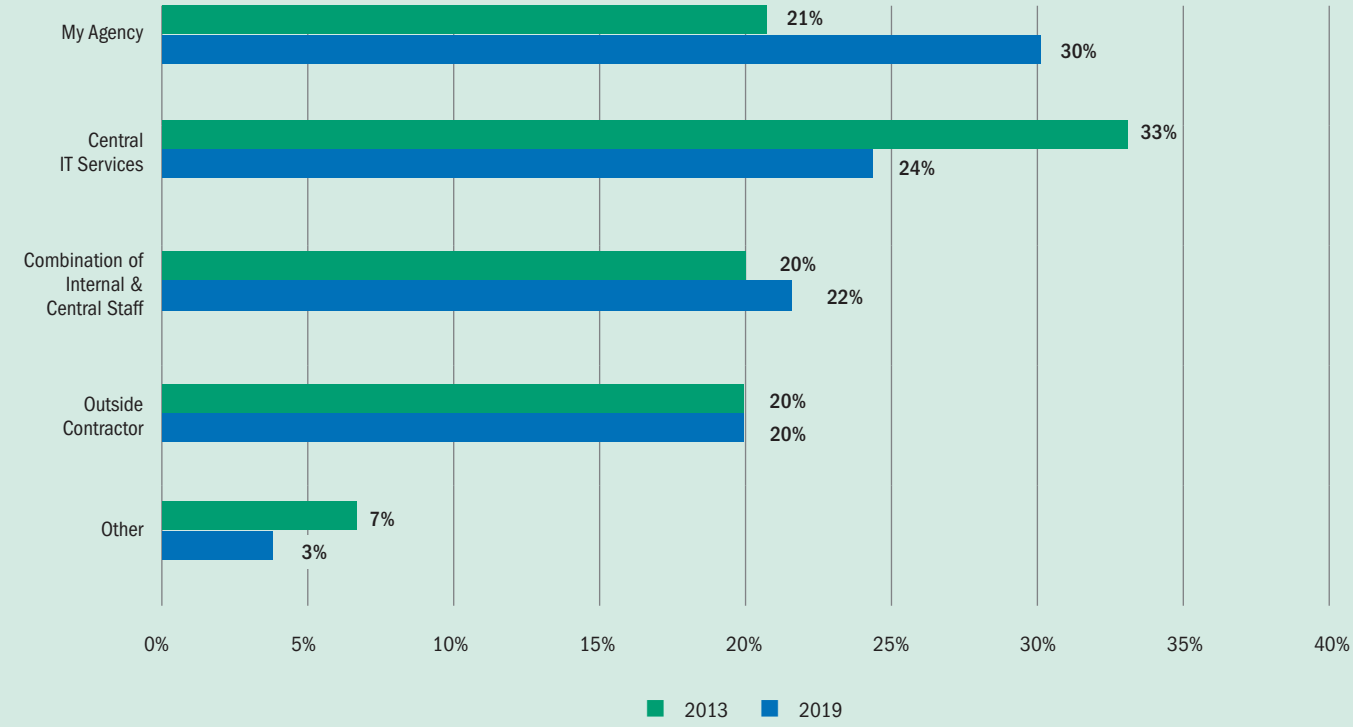


FIGURE 2: PREVALENCE OF CYBER ATTACKS

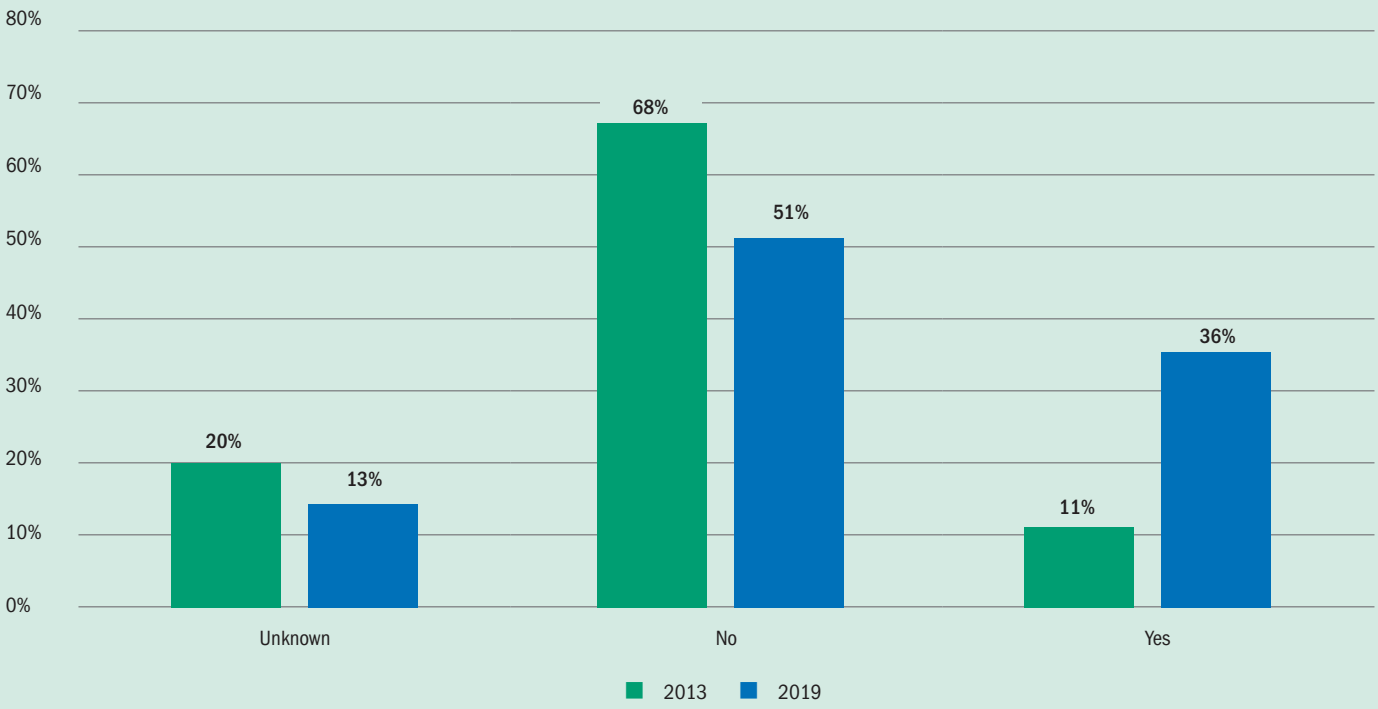


FIGURE 3: NUMBER OF COMPROMISES OR OPERATIONAL IMPACTS WITHIN 5 YEARS (2019)

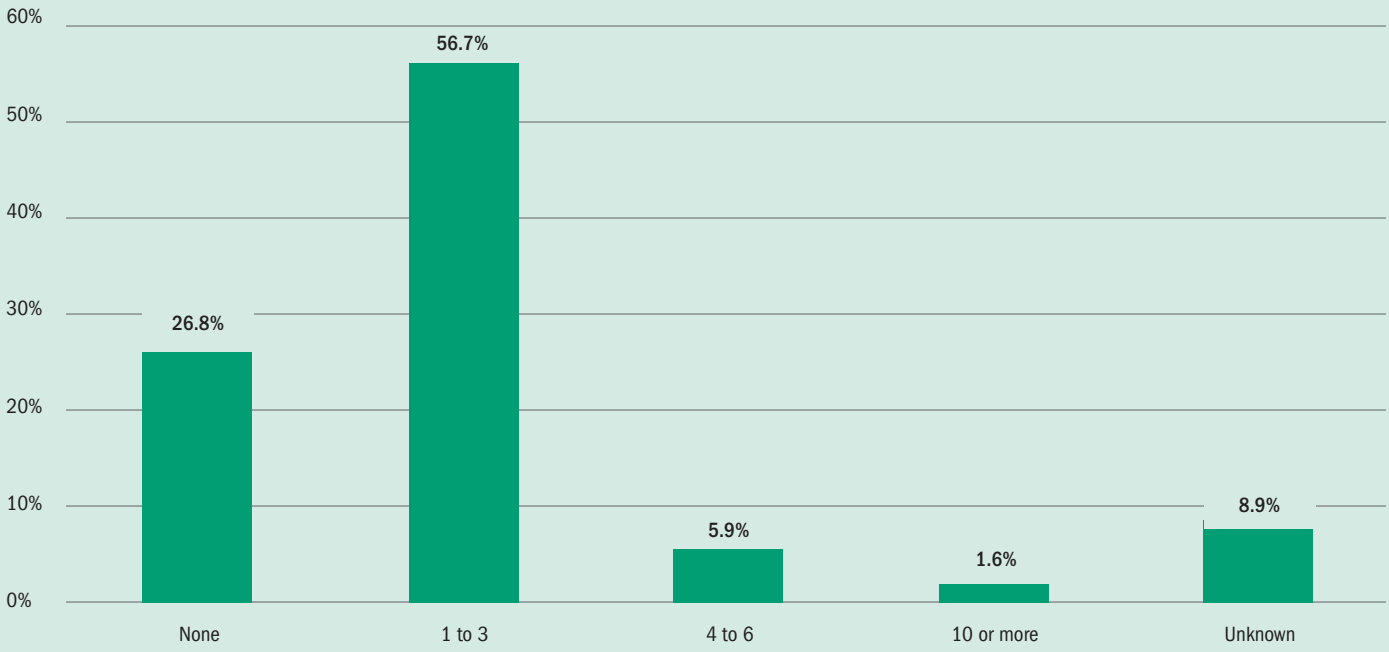
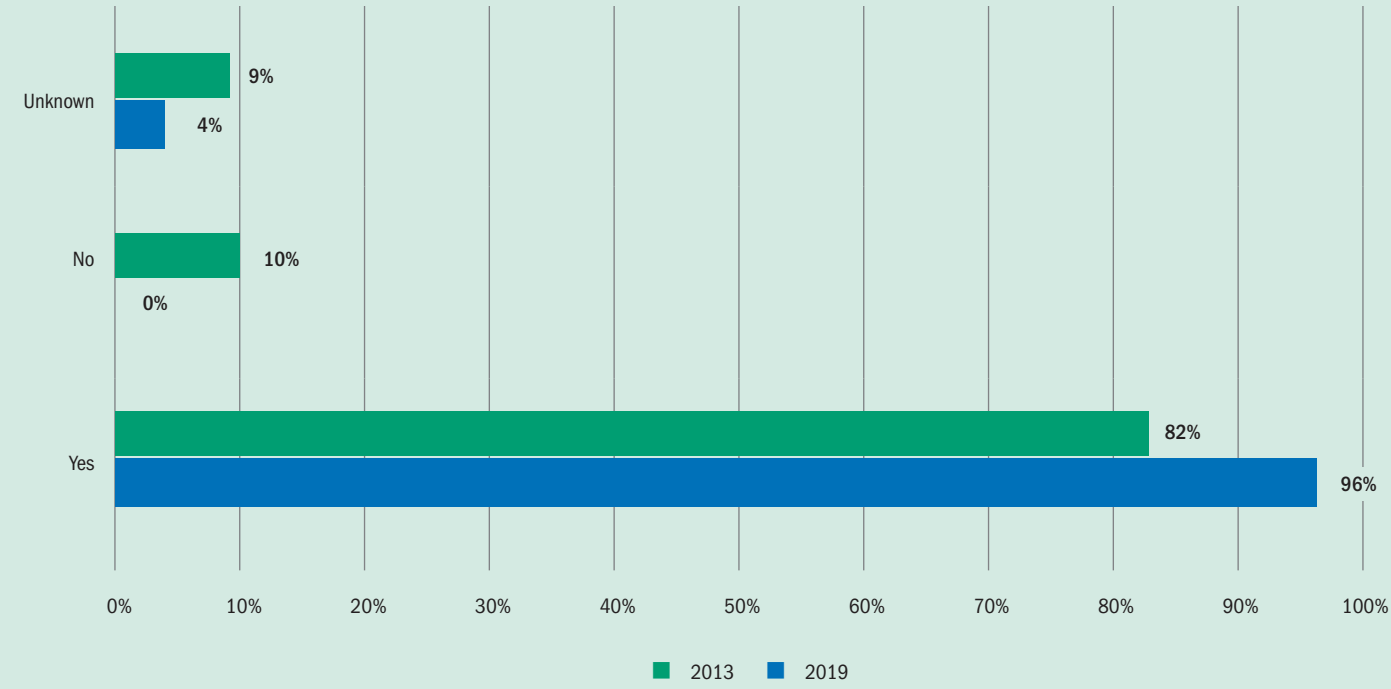


FIGURE 4: PERCEIVED RISK OF CYBER ATTACK

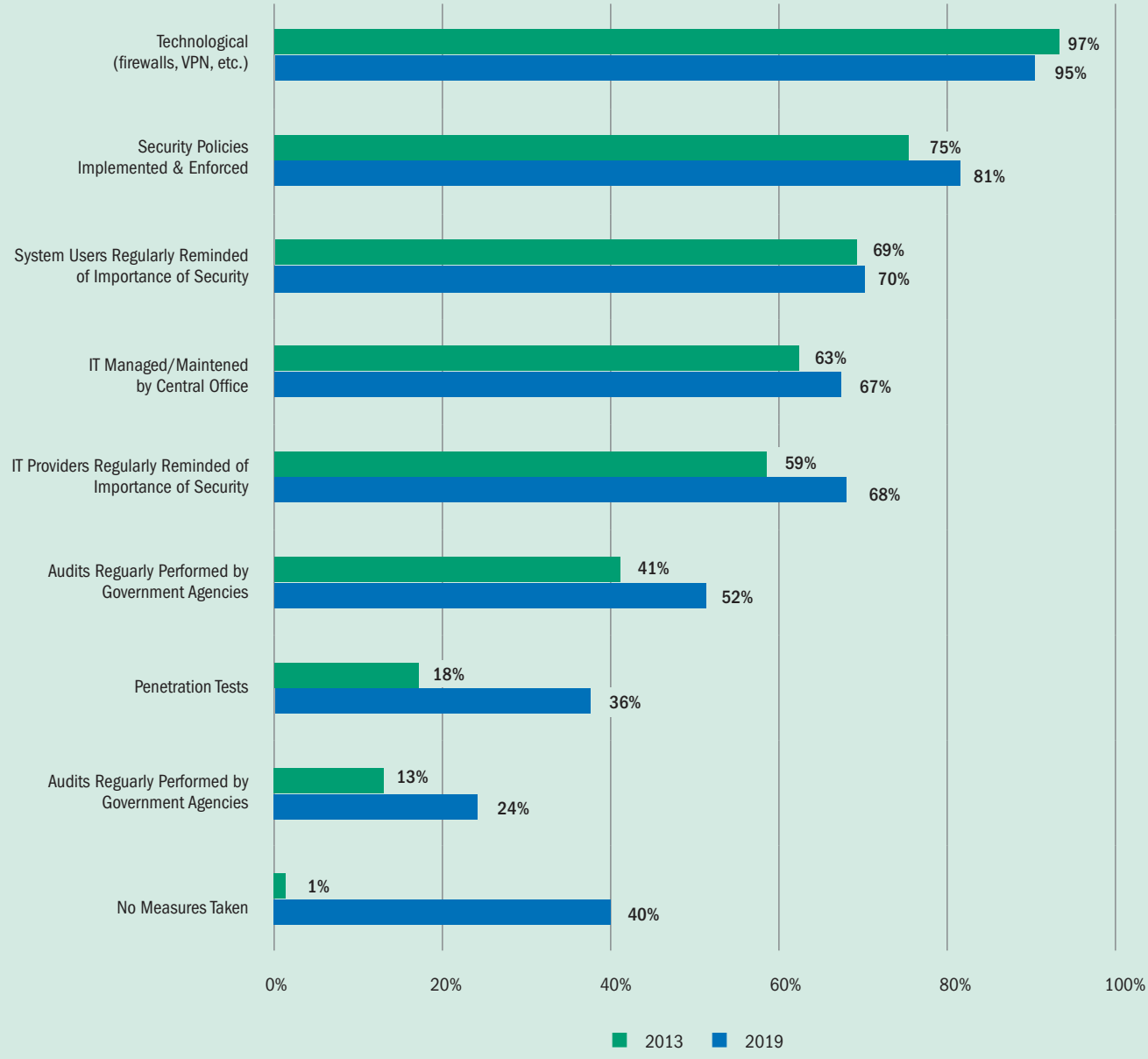


In 2013, the most common actions were technological, along with security policies implemented and enforced (see Figure 5). Only 13 percent of agencies in 2013 regularly had audits performed by a third party, and only 18 percent conducted security testing to examine controls. Many actions noted by executives in 2019 responses appear close to the 2013 levels with some slight increases for mitigation actions. However, it is noted there was a significant increase in penetration testing and third-party cybersecurity audits reflected in the 2019 data.

In conclusion, the two snapshots over a five-year window from 2013 to 2019 depict an extremely complex challenge faced by LEA executives across an extremely diverse demographic landscape. There are obvious indicators of increases in cybersecurity maturity over that period, as well as emergent challenges and resulting questions. While these data are not statistically substantive, allowing us to draw conclusions about the entire membership of both partner associations, they do provide insight and a basis for moving forward.

This article provides a basic overview of this research partnership and the data collected for comparison in 2013 and again in 2019. Please note there will be a plenary session at the 2020 IACP Technology Conference on cybersecurity where additional data from the survey will be examined in greater depth.

FIGURE 5: CYBERSECURITY ACTIONS TAKEN



Managing Key Assets

How Technology Can Streamline Digital Evidence, Fleet, and Personnel Management

THE LAW ENFORCEMENT PROFESSION REMAINS A DIFFICULT AND DANGEROUS FIELD DUE TO THE CONSTANTLY EVOLVING THREATS TO PUBLIC SAFETY.

Because of these threats, law enforcement administrators must ensure that their first responders receive specialized and valuable equipment to protect themselves while also protecting their communities. However due to budget restraints, agencies may struggle with providing their officers with the necessary equipment.

The ever-growing cost of policing technologies is causing agencies to reevaluate their budgets as they shift toward modern, evidence-based practices. Having proper asset management systems allows law enforcement administrators to keep track of the condition and location of the equipment their staff uses and determine how to best utilize the budget for high-quality products.

As new technology surfaces, companies bring forth important, effective products for use in the field. These same companies are offering financially feasible solutions for digital evidence, fleet, and personnel management.

DIGITAL EVIDENCE MANAGEMENT

NICE Systems, Inc., a provider of software solutions headquartered in Ra'anana, Israel, aims to provide solutions to agencies around the world that are undergoing internal transformations. NICE Investigate, a cloud-based digital evidence management software platform, was created to help agencies overcome the challenges associated with managing digital evidence assets, thus boosting efficiency, reducing costs, and helping investigators solve cases faster.

The idea for NICE Investigate stemmed from the number of agencies who were struggling with new data problems. "The volume and variety of digital evidence assets have grown exponentially over the last decade, and the means to manage them have not kept pace with this growth, hindering investigations," said Rod Guy, vice president of strategy and business development at NICE Systems, Inc.

Many agencies are looking to make the change from storing digital media in the same way they have stored physical evidence in the past—by tagging and storing multiple versions in various evidence rooms—to a more immersive and efficient software platform. According to Cambridge, Maryland, Police Department Retired Chief Daniel Dvorak, this traditional way of managing evidence has increased the amount of media, while also making it difficult to connect the evidence due to having separate data repositories.

Image courtesy of NICE Systems, Inc.

Rather than having investigators search for evidence to multiply, assemble, and transport, NICE Investigate provides a more efficient process by providing a single interface that investigators can use to access all the digital evidence on hand. The software can even apply analytics to all types of data and multimedia to uncover hidden connections and insights.

When using the digital evidence management software, investigators spend less time gathering and organizing evidence. Thus, they will have more time to solve cases with more valuable evidence to use in the courtroom. The three innovative application portals—the Community Portal, the Investigation Portal, and the Prosecution Portal—assist in organizing evidence throughout the entire life cycle of the investigation.

Alan Stringer, former digital evidence management system project manager at Merseyside Police, United Kingdom, said, "NICE Investigate has the ability to totally transform how departments manage investigations and digital evidence assets, improving case solvability, saving them time and money, and much more."

FLEET MANAGEMENT

To adhere to local, state, and federal regulations, departments may also look to improve their fleet management processes.

Looking to aid that change is Track Star International with the Track Star AVLS, a GPS fleet management solution designed to provide features and

WLI WOMEN'S LEADERSHIP INSTITUTE

IACP's Women's Leadership Institute (WLI) addresses the unique challenges and opportunities women face and helps them to succeed as they rise through leadership positions in public safety organizations. The course is open to men and women in sworn and non-sworn positions.

Women's Leadership Institute participants will:

- Further leadership skills and prepare for advanced leadership positions.
- Understand internal and external stakeholders and the impact of their individual differences.
- Learn the value of and how to have crucial conversations.
- Create a strategic career plan.
- Meet and learn from others to bring proven practices and strategies back to their organizations.
- Increase their professional network.

CURRENT OPPORTUNITIES

VIRGINIA BEACH, VIRGINIA, 2020

March 23-27

ORILLIA, ONTARIO (CANADA), 2020

April 13-17

WHEELING, ILLINOIS

May 4-8

COST

$1,380. This includes course materials and select meals.

Early registration discounts available.

FOR MORE INFORMATION:

IACP International Association of Chiefs of Police

LeadershipServices@theIACP.org • theIACP.org/WLI

800.THE.IACP

capabilities that are absent from other products in the law enforcement field.

"The product is best described as a 'system' which is comprised of software that we create and devices that communicate with the software," said CEO and president of the Charlotte, North Carolina–based software company, Michael Hughes. "Our software is unique in that, unlike other systems, it is a private, exclusive, and on-premise product designed not only to provide agencies with powerful functions not available elsewhere but also to deliver the highest level of data security."

Evolving from a project in 1994, Track Star has integrated an array of devices into its AVLS system to allow users the ability to track vehicle assets and personnel, as well as suspect vehicles, aviation assets, and K9 officers. The software provides real-time situational awareness of mobile operations by indicating location and status of equipment such as weapons releases, sirens, K9 doors, and spike strip containers.

Once the information is received, it is decoded and stored in the on-premise database. The server also processes the incoming data for customer-specified notification triggers and makes the appropriate notifications on-screen or via text or email messages.

Before the advent of GPS and data communications, a great deal of work went into the process of recreating and analyzing events that took place in the field," Hughes said. "Track Star AVLS has provided law enforcement with the tools necessary to address all of these situations by evolving the system in step with the evolution of technology."

PERSONNEL MANAGEMENT

Asset management encompasses not only the equipment and tools officers use, but also the officers themselves.

Due to the range in department size, companies must tailor their products to fit the needs of any agency. A Fargo, North Dakota–based software company brings a scheduling tool to the law enforcement profession that nearly any agency could utilize.

Administrators are able to keep track of their officers and staff through Atlas Business Solutions' ScheduleAnywhere.

Image courtesy of Atlas Business Solutions.

"ScheduleAnywhere helps law enforcement agencies manage their most important assets—their officers and staff members," said vice president and general manager of Atlas Business Solutions Jon Forknell. "This employee scheduling software streamlines the scheduling process and improves communication."

The software allows users to create and manage work schedules from any computer or mobile device at any time. Each schedule can be customized to show information and calculations that are important to a specific department.

ScheduleAnywhere automatically tracks the number of staff or hours scheduled, as well as skills and certifications to help ensure compliance. Agencies also have the ability to track assets assigned to individual officers, such as firearms, tools, and equipment.

When the need arises, ScheduleAnywhere enables officers to submit requests for a replacement/cover, swap, and time-off via the mobile app. Administrators can easily accept or deny the requests.

"ScheduleAnywhere saves law enforcement agencies time and money," Forknell said. "It cuts the time spent on scheduling by up to 75 percent and gives managers time to focus on other responsibilities."

Accountability is a powerful concept in the policing profession. It is important for criminals to be held accountable for their actions, just as the community holds law enforcement accountable for achieving resolutions. However, it is also necessary for law enforcement administrators to hold their own officers accountable for the equipment officers use so that money can be set aside for purchasing new and improved items—rather than replacing broken or lost ones. Asset management systems make that accountability easier for all involved.

SOURCE LIST

Please view this article online for an expanded list of asset management service providers.

- Atlas Business Solutions
- Benchmark Analytics
- Cordico
- CrimeCenter Software
- Envisage
- Equature
- Estes AWS
- JAMAR Technologies
- LexisNexis Risk Solutions
- NICE Systems, Inc.
- Salsbury Industries
- ScheduleAnywhere
- Sirchie
- Trackstar International
- WatchGuard

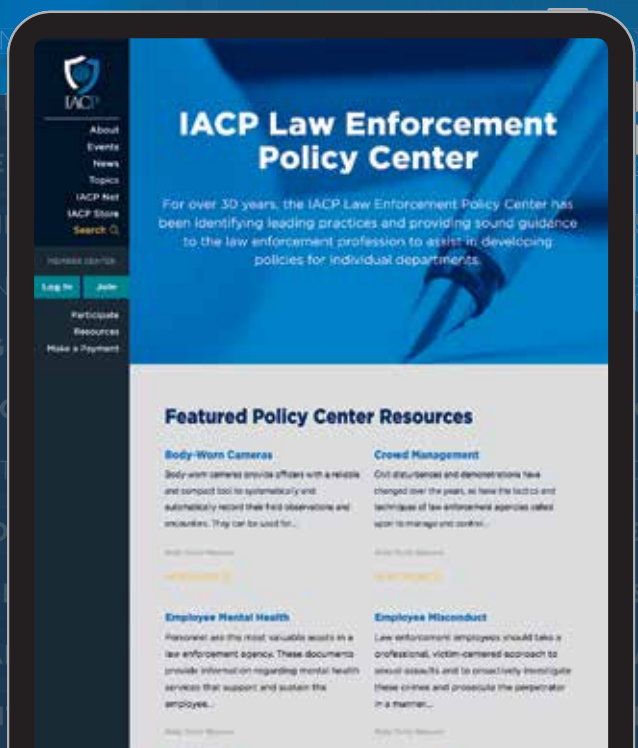
IACP

LAW ENFORCEMENT POLICY CENTER

The IACP identifies leading practices and provides sound guidance to the law enforcement profession to assist in developing policies for individual departments.

WANT TO GET INVOLVED?

Contact the Policy Center at
policycenter@theIACP.org
or visit the Policy Center website at
theIACP.org/policycenter


IACP Law Enforcement Policy Center
For over 30 years, the IACP Law Enforcement Policy Center has been identifying leading practices and providing sound guidance to the law enforcement profession to assist in developing policies for individual departments.
Featured Policy Center Resources
Body-Worn Cameras
Crowd Management
Employee Mental Health
Employee Misconduct

- Each document is written and **peer-reviewed** by two separate and distinct groups made up of experienced leaders in law enforcement, policy, and law.
- IACP members have access to documents on over **130 topics**! Learn about the latest evidence-based procedures for Active Shooters, Body-Worn Cameras, Hate Crimes, and more.
- **DID YOU KNOW** that the IACP Policy Center continually selects topics to update based on **member interest** and demand?

IACP
International Association of Chiefs of Police

Stay up to date on new products and advances in technology to ensure your officers are equipped with the tools they need.

SII

TOUGH MOBILE PRINTERS FOR THE TOUGHEST JOBS

Seiko Instruments, USA Inc.
sii-mobileprinters.com

Today's first responders demand extreme mobility, reliability, and productivity in the field to effectively protect and serve in their communities. In this highly demanding arena, Seiko Instruments' mobile printer family is designed to meet law enforcement's rigorous needs and offers faster prints combined with ruggedized capabilities and smaller form factors that get mission critical jobs done. Seiko Instruments is proud to introduce our ruggedized mobile printer family, specifically the MP-A40 4" MIL-STD-810G and IP54-rated ruggedize printer and MP-B30 3" rugged, IP54-rated printer that enhances productivity and workflow in the officer's day-to-day role. We work closely with departments and partners to develop highly valued solutions and trusted partnerships.

Seiko's long history and reputation, with its beginnings in watch making since 1881, continue to evolve as we deliver new achievements in precision IT manufacturing, quality, and high value solutions. In addition to our achievements in electronic components, consumer/business products, graphic computer peripherals and factory automation systems, we are a pioneer and the global leader in thermal print mechanisms. We are a global multibillion-dollar IT organization with worldwide headquarters located in Chiba, one of Tokyo's metropolitan locations in Japan. Our U.S. headquarters is based in Torrance, California.

www.sii-mobileprinters.com

Collision Prevention Technology

ECCO Safety Group (ESG), which includes the industry-leading Code 3 brand, launches its Connected Safety Solution powered by the HAAS Alert Safety Cloud. HAAS Alert's collision prevention technology paired with Code 3's lineup of reliable lighting and safety sends digital alerts that warn drivers of nearby public safety vehicles responding to an emergency. Drivers are notified through the Waze app on their mobile devices, Apple CarPlay, Android Auto, or compatible vehicle infotainment systems. With innovation in mobile and cloud technology, motorists now have enhanced capabilities to receive advanced warnings and urgent road hazard information.

www.code3esg.com

Portable Radio

Tait Communications is adding the TP9500 and TP9600 to its catalog of portable radios. Featuring best-in-class audio performance and built Tait tough for critical communications, these radios are designed for first responders and other users in high-noise workplaces and situations where time and safety are critical. Along with the enhanced call quality provided by a larger, more powerful speaker and dual-microphone active noise cancellation, user experience is further enhanced by a large color screen and Wi-Fi over-the-air-programming capability. Tait TP9000 series portable radios share battery and charger systems and accessories, allowing them to fit seamlessly into existing fleets.

www.taitradio.com

POLICE CHIEF *keeps you on the cutting edge of law enforcement technology with monthly product announcements. Items about new or improved products are based on news releases supplied by manufacturers and distributors;* **IACP endorsement is in no way implied.**

Hard Armor Suite

Expanding their high-performance hard armor suite of products, Honeywell announces protective gear specifically designed to meet stringent military protection requirements globally. Spectra Shield 6472 is the first product in the new Spectra Shield 6000 series. From bullet-resistant vests, breast plates, and helmets to combat vehicles and military aircraft, the shield series is as strong as steel, yet able to float. Honeywell's Shield technology offers helmets that are lightweight and able to protect against a range of threats. Honeywell ballistic materials have been protecting military and law enforcement personnel for more than 25 years.

www.honeywell-spectra.com

Video Management Software Update

In the latest update of Milestone XProtect 2019 R3 video management software, Milestone Systems introduces several new features and capabilities. The centralized search platform in XProtect Smart Client makes it possible for users to search for motion, alarms, events, bookmarks, and other data in one place. Milestone's Driver Framework allows device manufacturers to develop their own drivers while providing faster compatibility and deeper integration. The new adaptive streaming feature enables users to receive lower resolution streams from the recording servers when a high-resolution video is not required. Adding a device password management option makes it possible for administrators to manage all devices' passwords directly from the XProtect Management Client.

www.milestonesys.com

Aircraft Pod

BIRD Aerosystems unveils the AeroShield(M), a compact version of its combat-proven, all-in-one AeroShield pod. Equipped with BIRD's AMPS solution, AeroShield(M) ensures maximum aircraft protection with reduced drag and minimal interference. The pod offers the most comprehensive anti-missile protection by using both BIRD's SPREOS DIRCM and Flares, while enabling customers to fly fully protected in the most challenging theaters. AeroShield(M) is tailored to support the installation of BIRD's AMPS on medium size VIP jets such as the Falcon and Gulfstream. Easily installed, the pod integrates Missile Launch Detection Sensors (MILDS) and Flare Dispensers and can incorporate either the MACS sensor or SPREOS DIRCM.

www.birdaero.com

Special Application Vehicles

John Deere is proud to bring a new line of special application vehicles to suit the needs of federal, state, and local governments, as well as first responders. This custom line of utility vehicles was designed in conjunction with International Automated Systems (IAS). These machines can be customized to match other fleet vehicles and are available in red, white, blue, and black. End-users can determine location and placement of custom decals. These vehicles, under agreement with IAS, are available to the Department of Defense and governmental agencies at all levels. They are currently not available for commercial or residential purchase.

www.johndeere.com

Stock Replacement

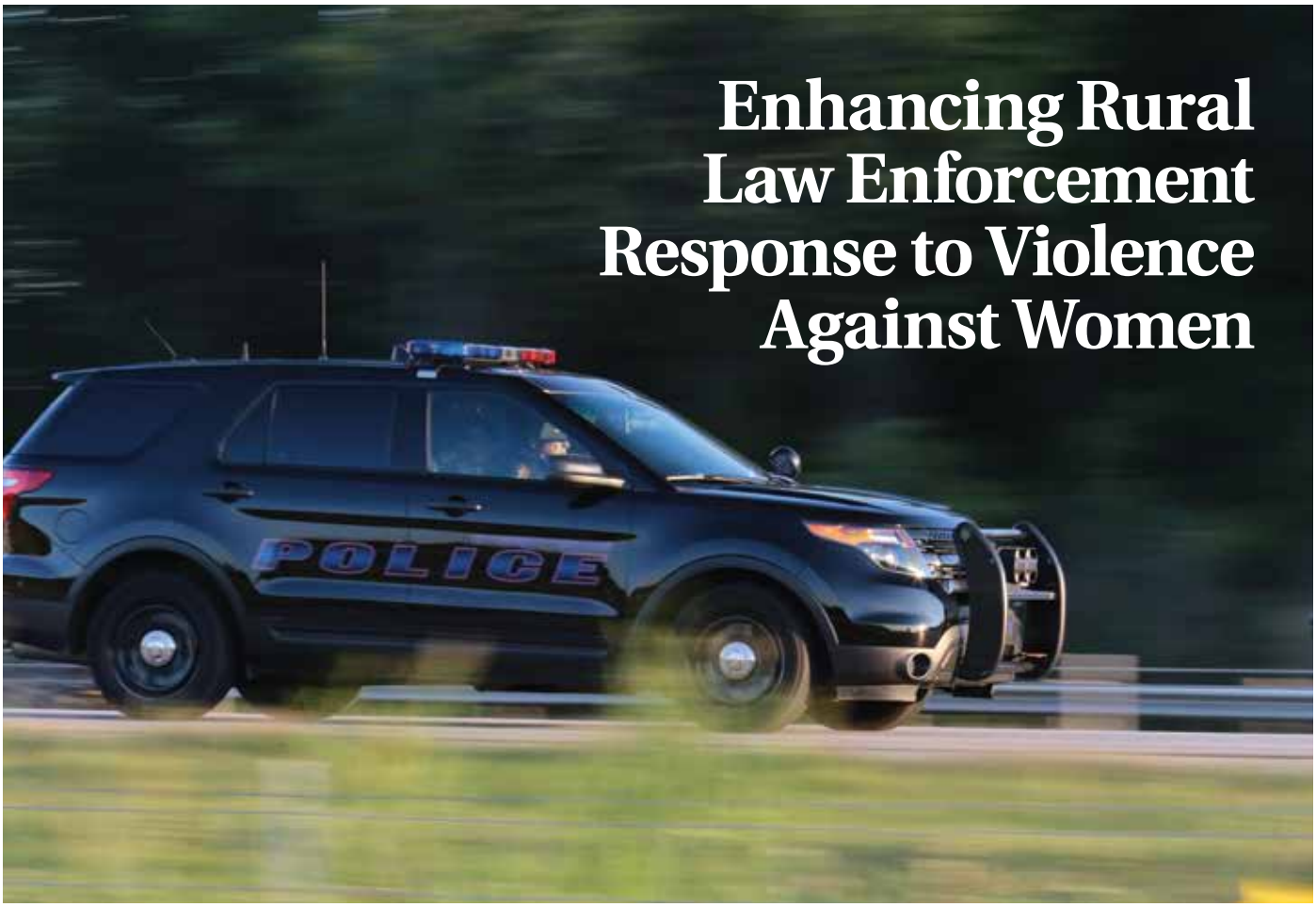
Mission First Tactical, LLC, introduces the Battlelink Extreme Duty Minimalist Stock. This slide-on replacement for a collapsible buttstock is capable of withstanding long-term abuse delivered by larger caliber firearms while remaining nimble. The angled, non-slip rubberized removable buttpad has multiple sling slots with single-point mount points, as well as the Quick Detach Sling mounting point positioned in the rear. It comes equipped with a single MLOK connection point, and the upper section provides an enhanced cheek weld. Mission First Tactical Battlelink Extreme Duty Minimalist Stocks are built for hard shooting and extreme treatment and shooting conditions. They come with a lifetime warranty.

www.missionfirsttactical.com

Public Safety Mobile Radio

L3Harris Technologies has expanded its popular XL product line with a multiband, P25 mobile radio for public safety and utilities. The XL-200M delivers crystal-clear audio across broadband and VHF, UHF, 700/800 MHz, and 900 MHz. The design focuses on ease of use, rugged performance, and providing more ways to connect and communicate. The XL-200M will be field upgradeable to LTE through a hardware plug-in, transforming a vehicle into a mobile communications hub that allows users to stay connected through Land Mobile Radio (LMR) and LTE networks. It has a rich set of built-in standard features, such as Wi-Fi, Bluetooth, and GPS.

www.l3harris.com



Enhancing Rural Law Enforcement Response to Violence Against Women

By
Michael Rizzo, Program Manager, IACP

THE IACP, WITH THE SUPPORT OF THE DEPARTMENT OF JUSTICE, OFFICE ON VIOLENCE AGAINST WOMEN (OVW), AND IN COLLABORATION WITH NUMEROUS SUBJECT MATTER EXPERTS, HAS DEVELOPED THE ENHANCING RURAL LAW ENFORCEMENT RESPONSE TO VIOLENCE AGAINST WOMEN TRAINING PROGRAM.

Each training event will provide information and strategies to participants that strengthen law enforcement and dispatch/telecommunicator response to violence against women, including domestic violence, sexual assault, stalking, and strangulation. Throughout 2020, the IACP and a multidisciplinary team will conduct four two-day regional training events across the United States.

Although rural areas are often equated with open space, tranquility, and a strong sense of community and family values, these communities may face significant economic, geographic, and service provision barriers that make it difficult to create, strengthen, or expand victim assistance services. Though most studies on the occurrence of domestic violence and sexual assault focus on and present realities of urban patterns of these crimes, the occurrence of domestic violence, sexual assault, and stalking in rural areas is as prevalent, if not, according to some research, more prevalent than in urban populations. Historically, rural communities have experienced low rates of economic growth and high rates of unemployment and underemployment, all of which can contribute to an increase in crime. In urban areas, many of these conditions can be addressed through various programs and available services, but rural communities often lack similar services, including those to support sexual and domestic violence victims. Because of the lack of services, law enforcement often bears the burden of filling in these gaps.

There are numerous barriers and challenges that may impact the ability of law enforcement to effectively respond to domestic violence, sexual assault, stalking, and strangulation in rural communities. Responding agencies may have limited personnel, may be required to patrol expansive geographic areas, and lack the needed victim support resources. Rural settings may impact the length of time it takes for law enforcement response, lack availability of and access to telephones, and have limited emergency

services. Additionally, rural law enforcement agencies may have limited access to up-to-date training, making it difficult to remain current on the most recent promising practices for responding to and investigating these complex crimes.

Due to these distinct complexities, the Enhancing Rural Law Enforcement Response to Violence Against Women training events aim to provide rural law enforcement the needed information to strengthen agency response to and investigation of these crimes; identify effective methods and strategies to increase the safety of victims, officers, and communities; and hold offenders accountable. The training content includes details about

- the influence of societal myths and stereotypes;
- predominant aggressor determination;
- enforcement of protective orders;
- firearm seizures;
- the neurobiological impact of trauma;
- understanding perpetrator behavior; and
- conducting effective investigations, among other topics.

The IACP will engage a cadre of multidisciplinary subject matter experts to present the training content. Upon completion of the two-day Enhancing Rural Law Enforcement Response to Violence Against Women training event, law enforcement officers and dispatch/telecommunications professionals will be able to

- illustrate the interconnected nature of domestic violence, sexual assault, stalking, and strangulation;
- articulate common frustrations when responding to these crimes and how a thorough, comprehensive response may alleviate these challenges;
- identify promising practices to address the complexities of rural policing when responding to these crimes and present a range of practices to strengthen efforts to address these crimes; and
- explain how partnerships and collaborations can enhance and improve response to these crimes.

For more information about the locations and dates, go to https://bit.ly/30K8397. To connect with staff working on the IACP victim services initiatives, please email stopviolence@theiacp.org.

> ***"Rural communities may face significant barriers that make it difficult to create, strengthen, or expand victim assistance services."***

SAVE THE DATE!

LEGAL OFFICERS SECTION

IACP SPRING TRAINING & MIDYEAR MEETING 2020

APRIL 27-MAY 1
DENVER
COLORADO
theIACP.org

Embassy Suites Denver Downtown Convention Center
1420 Stout St., Denver, CO 80202

This intensive, week-long program is designed for police attorneys of all experience levels with foundational information for new attorneys and leading edge material for more seasoned professionals.

TRAINING TOPICS INCLUDE:

- Gun Violence Restraining Orders
- Supreme Court Update
- Police Response to Homelessness
- Discipline Procedures
- *Brady/Giglio*
- CBD/Hemp and THC
- Civilian Oversight
- Use of Force Legislation
- Legal Advisor 101

IACP International Association of Chiefs of Police

REGISTER BY MARCH 31 AND SAVE!

For information on registration and hotel reservations, visit www.theIACP.org/working-group/section/legal-officers-section

American HEARING BENEFITS

IACP

90%

90% of hearing aid owners
would recommend them
to a friend or family member
with a hearing problem.

Source: Better Hearing Institute
© Starkey Hearing Technologies.
All Rights Reserved.

Learn more about how you can save online at
theiacp.org/member-benefits.

IACP Net Periodicals Features Three New Publications

Looking for an article that you remember reading a couple years ago but can't find the hard copy issue in your office? IACP Net's Periodicals section houses articles from seven major publications, all fully searchable.

Three new periodicals were recently added to the section, joining the extensive library of back issues from *Police Chief*, *AELE Monthly Law Journal*, *FBI Law Enforcement Bulletin*, and *Sheriff & Deputy*.

Evidence Technology Magazine was the first trade publication in the United States focused exclusively on evidence collection, processing, and preservation. Topics include crime scene investigation, fingerprint technology, investigator safety, computer forensics, DNA analysis, and firearm and toolmark examination.

H.Q. is the official publication of the Ontario Association of Chiefs of Police. Articles regularly address vital law enforcement topics in Canada and abroad, such as recruitment, policing data, and evidence-based solutions.

Launched in 2018, the ***Thames Valley Police Journal*** aims to share the diverse range of academic work of the Thames Valley, England, Police Service. The journal's goals include informing evidence-based development of policy and practice and supporting discussion about a variety of policing issues less related to formal academic work.

Access these resources and more at **theIACP.org/IACPnet**. For more information, call the IACP Net team at 800.227.9640.

FEATURED ITEM IN IACP MONTHLY JANUARY NEWSLETTER

Resources for Responding to Vehicle Crime Now Available

The IACP Vehicle Crimes Committee recently developed a comprehensive educational toolkit for vehicle crimes investigations. With the resources and data providers compiled in this toolkit, agencies will have additional tools to conduct investigations involving vehicles associated with crime.

Access this resource at **theIACP.org/resources/document/educational-toolkit-for-vehicle-crimes.**

THIS MONTH'S QUOTE

"The scale has tipped in favor of public safety integration of drones into routine operations, and the role of drones will accelerate until fully evolved into an entirely new paradigm of public safety service delivery."

"Drone as First Responder" by Vern Sallee 32–39

TWEET of the month

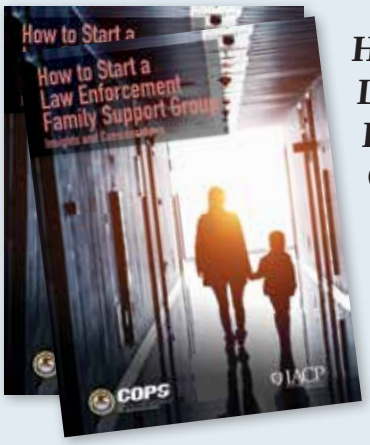
The IACP @TheIACP

Honor. Dedication. Leadership. Sacrifice.

These are just a few words to describe the LEOs who protect our communities. Thank you for your service, your commitment, and your sacrifice. We appreciate you. #LawEnforcementAppreciationDay

IACP International Association of Chiefs of Police

POPULAR IACP RESOURCE



How to Start a Law Enforcement Family Support Group: Insights and Considerations

Access this resource and more at **theIACP.org.**

TOP IACP BLOG POST

Commission on Law Enforcement and the Administration of Justice Begins Its Work

After more than two decades of advocacy, the International Association of Chiefs of Police (IACP) had a front row seat to history this week as the association's leaders joined Attorney General William Barr on Wednesday as he swore in the 16 commissioners of the Commission on Law Enforcement and the Administration of Justice at the U.S. Department of Justice. This is the first comprehensive commission on U.S. criminal justice since the 1960s.

Read this blog post and others at **theIACP.org/blog.**

TOP *POLICE CHIEF* JANUARY ONLINE BONUS ARTICLE

"Succession Planning and Intentional Leadership"

By W. Shane Stafford, Captain, Tennessee Highway Patrol

Read this article and more bonus content at **policechiefmagazine.org/category/bonus-online-article.**

Public-Private Partnerships—As Important as Ever for Police Effectiveness

A Message from the IACP Private Section Liaison Section

THERE ARE MANY REASONS THAT POLICE DEPARTMENTS MAY WANT TO ESTABLISH COLLABORATIVE RELATIONSHIPS WITH THE PRIVATE SECTOR.

In addition to marshaling resources to fight traditional crime, the new reality of terrorism can be viewed as an imperative to have engagement with businesses and other elements of the private sector, including transportation, schools, and health care facilities. Improving business districts, leveraging the technical expertise of the private sector, and planning and executing complex special events round out a short list of reasons why partnerships are important.

The IACP has long supported the concept of public-private partnerships and their role in enhancing police agency effectiveness. Since 2007, the IACP Leadership Awards have included the Michael Shanahan Award for Excellence in Public-Private Cooperation, which highlights and demonstrates that effective partnerships go far beyond crime reduction programs. From the first winner in 2007, the NYPD SHIELD Program, a seminal effort to share information about counterterrorism with private sector security managers, to last year's winner, the Morris County Sheriff's Office/Center for Addiction Recovery Education and Success Hope One project, a mobile outreach program that brings recovery resources into communities where drug sales and overdoses occur, the breadth of the types of partnerships that have helped police agencies solve vexing problems are apparent.

The IACP Private Sector Liaison Section was established in 2019, as a successor to the committee of the same name. Serving as a venue for chiefs, IACP members of other ranks, and IACP associate members in the private sector, this new section invites these groups to join and participate in the conversations and projects showcasing the myriad ways the private sector can collaborate with and assist law enforcement.

A good example of the importance of partnerships can be garnered by examining active threat/active shooter/mass casualty attacks. Time and time again, after action reports demonstrate how effective response is directly intertwined with adequate preparation between the first responder community and private businesses and institutions. A great resource highlighting steps that law enforcement agencies can take to maximize the effectiveness of their response to a mass casualty attack in the preparation, response, and recovery phases is the IACP/Target Infographic *Combined Response to Mass Casualty Attacks*, which can be accessed in the IACP website's Resources section. This easy-to-read pamphlet summarizes the outcomes of a one-day conference on mass casualty attacks and contains links to resources that can help police chiefs enhance their preparedness for the unthinkable by leveraging the private sector and other first responders.

The opportunity for continued growth in public-private partnerships remains, as a recently published Major Cities Chiefs Association study found. In *Public/Private Partnership Project: Creating a Roadmap for Effective Collaboration Between Local Law Enforcement Executives and Corporate Chief Security Officers*, Leslie Silletti and Jayhon Ghassem-Zadeh state, "While a structure currently exists for CSOs and federal agencies to collaborate on the national level, a gap remains in the effort to coordinate among corporations, federal agencies, and local law enforcement at the executive, decision-maker level." The study goes on to distinguish between tactical and strategic-level partnerships and proffers "key ingredients" for successful collaboration.

The opportunities for police agency executives to interact with the private sector are almost limitless, constrained only by imagination and propriety. The IACP and its Private Sector Liaison Section will continue to explore and disseminate best practices and forge new partnerships, and executives should take advantage of the tools and resources IACP can provide in this area to maximize their effectiveness.

GET INVOLVED

- Join the IACP Private Sector Liaison Section.
- Attend the section meeting at IACP 2020.
- Consider applying for the Michael Shanahan Award for Excellence in Public-Private Cooperation.

CALENDAR

2020

MAR 24 — 26

IACP Division Midyear, DENVER, CO

The Division of State and Provincial Police, Division of State Associations of Chiefs of Police, and Midsize Agencies Division's annual midyear meeting provides an opportunity to discuss critical issues facing the law enforcement community, identify best practices, and enhance relationships with colleagues.

theIACP.org/events/2020-division-midyear

APR 20 — 22

PIO Midyear Conference, ARLINGTON, TX

The IACP PIO Midyear conference brings together public information officers from across the globe to deep-dive into new information sharing efforts, best practices, case studies and more. With 20 hours of training, attendees will walk away with new and advanced knowledge about how to communicate with their communities and engage with residents in new and exciting ways.

theIACP.org/events/conference/iacp-pio-section-midyear-conference

APR 27 — MAY 1

Legal Officers Section Spring Training & Midyear Meeting, DENVER, CO

This intensive, week-long program is designed for police attorneys of all experience levels with foundational information for new attorneys and leading-edge material for more seasoned professionals.

theIACP.org/working-group/section/legal-officers-section

MAY 1 — 3

Policy Council Midyear, ORLANDO, FL

This meeting will provide an opportunity for IACP committee members to discuss critical issues facing the law enforcement community, identify best practices, and enhance relationships with peers and colleagues in the field. This meeting is for appointed members of IACP committees.

theIACP.org/policy-council-midyear

MAY 12 — 14

IACP Technology Conference, PORTLAND, OR

The IACP Technology Conference is a professional law enforcement event bringing together leading practitioners to explore opportunities to apply the latest technologies to law enforcement to create efficient solutions and keep pace with cyber-enabled crimes.

theIACP.org/tech-conference

JUL 13 — 15

SPPADS Annual Conference, SEATTLE, WA

The 2020 IACP SPPADS Conference is dedicated to advancing the principles and competency of professional law enforcement instructors. This professional law enforcement event provides a forum for academy directors and instructors to exchange ideas, methods, practical experience, and to discuss critical issues as well as an opportunity to network with their peers.

theIACP.org/events/conference/2020-sppads-annual-conference

AUG 6 — 8

DAID Conference, SAN ANTONIO, TX

The DAID Conference features a mix of plenary sessions and concurrent workshops that are designed to keep attendees up to date on the latest practices and science relating to impaired driving with a focus on drug impairment detection and recognition. Attendance is open to drug recognition experts, physicians, prosecutors, toxicologists, sworn officers, first responders, and civilian employees of public safety and government agencies.

theIACP.org/DAIDconference

OCT 17 — 20

IACP Annual Conference & Exposition, NEW ORLEANS, LA

Since 1893, the IACP has been shaping the law enforcement profession. The IACP Annual Conference and Exposition has been the foundation, providing leaders with new strategies, techniques, and resources they need to successfully navigate the evolving policing environment.

theIACPconference.org

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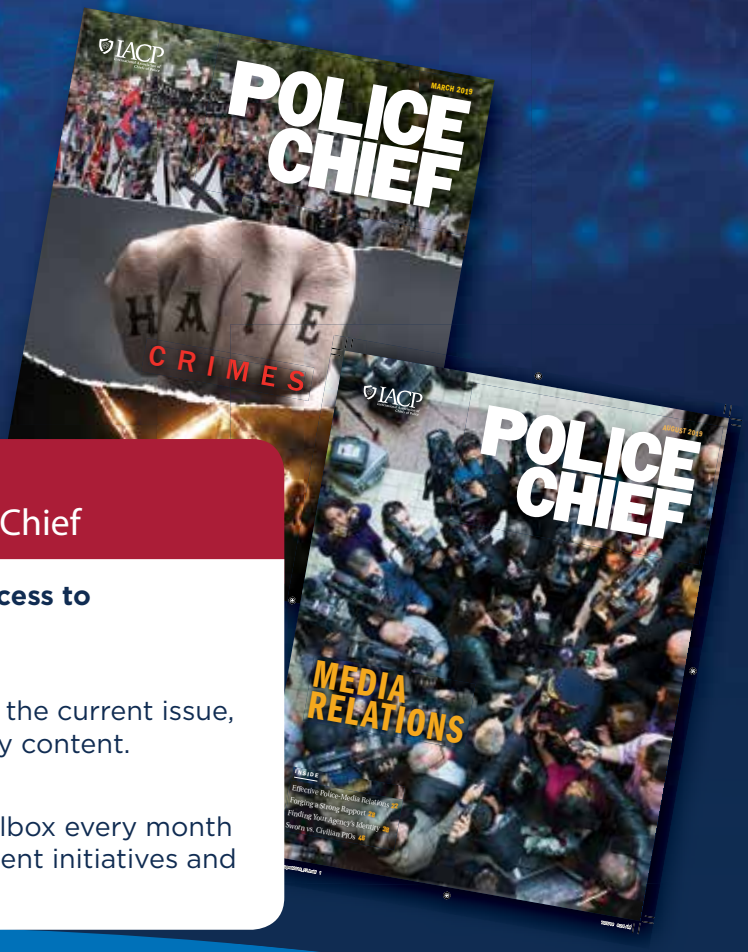

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